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THE STEVENS COMMISSION.

REPORT OF THE COMMISSION ON THE TREATMENT OF
EPILEPSY AND CHOREA BY THE CORRECTION
OF OCULAR DEFECTS.

Made to the New York Neurological Society, November 5th, 1889.

REPLY OF DR. STEVENS TO THE REPORT OF THE
COMMISSION.

DISCUSSION OF THE REPORT BY THE NEW YORK NEU-
ROLOGICAL SOCIETY,

TOGETHER WITH

THE FULL HISTORIES OF THE CASES UPON WHICH THE
REPORT WAS BASED.

Reprinted from the JOURNAL OF NERVOUS AND MENTAL DISEASE,

CHAS. HENRY BROWN, M.D., Editor.

November-December. 1889.

REPORT OF THE COMMISSION
ON THE
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NEW YORK NEUROLOGICAL SOCIETY,

*November 5th, 1889.*¹

MR. PRESIDENT :

The Committee known as the "Stevens Commission," appointed two and one-half years ago, beg leave to submit the following report to the Neurological Society.

INTRODUCTORY REMARKS.

At a meeting of the Society held March 1, 1887, Dr. Geo. T. Stevens, of this city, read a paper entitled, "Irritations arising from the Visual Apparatus considered as Elements in the Genesis of Neuroses."² Great interest was manifested in the hearing of this essay, as it was a *résumé* of the author's work during many years; a work characterized by

¹ The first copy of the reports obtainable by us was the one sent officially to Dr. Geo. T. Stevens by the Commission. It was not till this copy had been set in type that we were requested to compare and arrange this report in conformity with the one in possession of the Commission. The ophthalmological addenda spoken of in Dr. Starr's letter to Dr. Stevens have been incorporated in the report.

Differences in the report are carefully noted in italics, which are those of the Commission, and any corrections that were made in the report since read (November 5th) have been separated by the aid of the Secretary of the Commission and placed in foot-notes, also in italics. We have compared and adjusted slight typographical differences with the aid of the Secretary of the Commission.

Exhibits will not be published. The full histories will appear in the December number.—EDITORS.

² Published in the New York Medical Journal, April 16, 1887.

exactness of method, great perseverance, and remarkable satisfaction with the results obtained. While the author disclaimed the pretension that ocular defects and consequent nervous strain were the sole cause of the great neuroses, chorea, epilepsy, and hystero-epilepsy, he yet advanced the proposition that these defects and the consequent strain were such potent exciting causes of these diseases, that their correction would in many cases lead to cure, or at least relief. The interest of the discussion which followed the reading of the paper lay in the relation of eye-strain to the genesis of chorea and epilepsy. The author's views were so novel and extreme, his allegations of good results so strong, that there was a general expression of a desire to thoroughly test his methods. Simple negation, based on different personal experience with these two diseases seemed of little value, and a number of members of the Society suggested that a fresh series of cases of chorea and epilepsy be treated by Dr. Stevens, under the supervision of a committee, and that a report of results be made in due time. It is hardly necessary to state that every member of the Society was disposed to welcome a new treatment of the neuroses, if its efficacy could be established upon concurrent testimony. This feeling led to the appointment of the Commission to co-operate with Dr. Stevens in the test of his method upon new cases.

STATEMENT OF DR. STEVENS' ALREADY PUBLISHED VIEWS.

It may be well to state here, very briefly, Dr. Stevens' views as regards the etiology and therapeutics of chorea and epilepsy. We quote from the paper read before the Society.

"Difficulties attending the functions of accommodation and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in those processes are among the most prolific sources of nervous disturbances, and, more frequently than other conditions, constitute a neuropathic tendency." This proposition which had been submitted (supported by an elaborate essay) to the Royal Academy of Medicine of Belgium in 1883, presumably well.

illustrates Dr. Stevens' views as to the etiology and pathogeny of neuroses. Several cases are related in these two publications showing good results, cures and ameliorations, in a number of cases of chorea and epilepsy.³

As it is of great importance to have a more definite idea of Dr. Stevens' results in chorea and epilepsy, we must quote from a book published by him in 1887, entitled "Functional Nervous Diseases, their Causes and Treatment," which, we assume, sums up the author's whole experience to date, *i. e.*, up to the time when the Commission began its conjoint study with Dr. Stevens. With respect to *chorea*, the following brief *résumé* may be made. As regards the relation of ocular defects to the disease, Dr. Stevens states that he has examined 118 cases, and found defects as follows:

Simple hypermetropia,	-	-	-	-	in 78 cases.
Hypermetropic astigmatism,	-	-	-	-	in 13 "
Mixed astigmatism,	-	-	-	-	in 5 "
Myopia, unequal in two eyes,	-	-	-	-	in 6 "
Myopic astigmatism,	-	-	-	-	in 11 "
Insufficiency of the lateral recti muscles,					in 5 "

It is also stated that in "a considerable number" of the cases with refractive errors, there was more or less muscular disability. Thus it appears that not one of 118 subjects of chorea, according to Dr. Stevens, presented a normal ocular apparatus. Dr. Stevens concludes:⁴ "After a careful study of the cases which have been examined, and treatment of many of them for the removal of ocular anomalies, the author does not hesitate to assert the direct relation

³ This publication in book-form includes the substance of the Brussels Essay, which has since been published by the Royal Academy of Medicine of Belgium, among its "Memoires des Concours et des Savants Etrangers, Vol. VIII., fasc. 3, 1888;" under the author's title of, "Essai sur les Maladies des Centres Nerveux, leurs causes et leur traitement; Irritation oculo-neurale." The essay read before the Neurological Society is really of later date and contains additional private cases and others observed at the Willard Asylum for the Insane, New York.

⁴ Op. cit., p. 93. ⁵ Op. cit., p. 92. ⁶ Op. cit., p. 93. ⁷ Op. cit., p. 100.

⁸ Functional Nervous Diseases, p. 105.

between these ocular difficulties and the disease in question." With respect to therapeutic results, we note as follows. Dr. Stevens says:⁵ "It can be easily understood, then (after having shown the frequency of hypermetropia), why chorea, in the ordinary cases, ceases, as does asthenopia, but somewhat less promptly, upon the discontinuance of the use of the eyes for close work." Hence the apparent advantage of withdrawal from school. The remarkable assertion is also made that "a supposed cure of chorea" (by ordinary means in several of his cases) "has only been a change to chronic headache or other neuroses."⁶ Eight cases, all successful, are reported in the three essays, several appearing in two of the essays. Two of these eight cases were only improved. No statistics are given, but the statement is made that many other cases have been cured. Upon these data the author says:⁷ "May we not conclude that chorea is emphatically a nervous trouble depending upon ocular conditions?"

With respect to *epilepsy* we are informed that the following ocular conditions were found in 100 consecutive cases:*

Hypermetropia (including hyp. astig.),	-	in 59 cases.
Myopia (including myopic astig.),	-	in 23 "
Emmetropia (or errors less than 1 D.),	-	in 18 "

"In the greatest number of cases examined in private practice very marked insufficiency of the motor muscles of the eyes was found, and it may be here observed that, so far as ocular irritations are concerned in the origin of a tendency to epilepsy, muscular irritations are doubtless much more efficient than refractive anomalies."⁹

As regards therapeutic results we would simply present the following quotation from the paper read before the Society: "Of sixty-four consecutive cases of well marked epilepsy in private practice, of which in every instance the disease had been of more than one and in most of many years' duration, and in all of which the treatment has been directed to ocular conditions, medicines having been,

⁹ N. Y. Medical Journal, *l. c.*—p. 426.

except in a single instance discontinued, thirty-two have remained free from attacks for a time varying from several months to several years (a foot-note states that 'several of these patients have remained well for a period of from five to seven years'), a time which would in all ordinary conditions enable us to regard the cases cured. Twenty-one have shown under this treatment such marked improvement as to indicate with certainty that the ocular conditions and the disease were in relation as cause and effect. In some of these cases the change has been very remarkable, but short of absolute relief. In eleven cases no improvement has occurred, or, if any, of only temporary character. Thus, without the employment of drugs to destroy the nervous susceptibility to irritating causes, 50 per cent. of these patients are, so far as can be known, well; another large proportion much better off than while using bromides, while only 17 per cent. show no improvement." In this three essays upon the subject Dr. Stevens has given brief summaries of the history of only 17 cases, 13 from his private practice, and 4 from the Willard Asylum for the Insane. Of these, ten cases are reported as "cured."

It will thus be seen that as regards chorea Dr. Stevens leads us to believe that he considers it essentially dependent upon ocular conditions, but gives no numerical statistics showing the proportion of cures; and that as regards epilepsy he reports about 50 per cent. of cures through treatment of the ocular conditions.

PLAN OF THE INVESTIGATION.

The first proposition unofficially made to Dr. Stevens after the reading of his paper, by a member of your Commission, was that his recorded cases should be sifted and reported upon to the Society. This suggestion, not altogether unreasonable in view of the extraordinary results claimed was instantly rejected, as implying a doubt of Dr. Stevens' veracity. Then it was proposed that new cases of chorea and epilepsy should be furnished to Dr. Stevens by members of the Society and their treatment watched, recorded and reported upon by a committee of the Society,

acting conjointly with the author of the paper. This was accepted and your Commission duly appointed. It organized March 26, 1887, with Dr. E. C. Seguin as Chairman and Dr. M. Allen Starr as Secretary. After repeated conferences with Dr. Stevens, and considerable debate as to modes of procedure and mutual concessions, the following plan of agreement was finally adopted. It is as follows :

PLAN OF PROCEEDINGS IN THE INVESTIGATION REGARDING DR. STEVENS' METHODS OF TREATMENT IN FUNCTIONAL NERVOUS DISEASES, ADOPTED BY THE NEUROLOGICAL SOCIETY'S COMMISSION.¹⁰

1. The subjects to be investigated shall be functional nervous diseases, of which epilepsy and chronic chorea are especially selected, the Commission being satisfied that these are typical neuroses, and admitting that reasonable success in their treatment will establish the proposition that neuroses are curable by the correction of ocular defects. The number of cases subjected to treatment shall not be less than twelve or more than twenty.

2. Typical cases only of these diseases shall be chosen, which are not complicated by any known organic disease, and which have resisted approved methods of treatment for a reasonable time. The precise character of the neuroses shall be fully established by independent examination by two members of the Commission, and disputed cases shall be excluded from treatment. The patients shall be sufficiently intelligent to enable correct judgments regarding the ocular conditions to be reached. They should be sufficiently neat in their appearance to be received in a private office.

3. General medical histories of each case shall be recorded, and a copy filed with the Secretary open to inspection by all members of the Commission. A copy of the history shall be furnished to Dr. Stevens with the case. Such histories shall include a complete medical record of the case, of the existing physical and mental condition, not only in respect of the most important affection, but also in respect of collateral states which any of those engaged in the inquiry shall deem of importance. The record shall also include a history of preceding treatment so far as it may be known. Photographs may be obtained of any or all patients, at Dr. Stevens' option, before and after the ocular treatment, the negatives not to be "retouched" in either case.

¹⁰Incorporated in the report by consent of the Secretary of Commission.

4. The first ophthalmological examination of any cases shall be made by Dr. Stevens in the presence of at least one member of the Commission. The cases submitted to Dr. Stevens are not to be selected because of the presence or absence of known ocular defects. Subsequent to Dr. Stevens' first examination, and prior to operation, the ocular condition may be investigated by any member of the Commission. When Dr. Stevens has by one or more examinations determined the nature of the ocular defect for which an operation is necessary, he shall record the same prior to the operation and deliver the record to some member of the Commission. The result of the examination by the ophthalmological members of the Commission shall also be recorded; and these records shall be filed with the Secretary. At least one member of the Commission may be present at all operations, due notice (forty-eight hours) of such operation having been given by Dr. Stevens to the Secretary. But the absence of members is not to prevent Dr. Stevens from proceeding with the operation, provided a reasonable time be given (fifteen minutes) for the appearance of the members notified. Notifications of operation are to be sent to the ophthalmological members of the Commission and to the member whose case is to be operated upon, by the Secretary.

5. A report shall be made by Dr. Stevens to the Commission of the conditions found of the methods and details of treatment, and of the progress of the case and the conditions remaining at the time of making the report. If any patient declines or neglects treatment, such case shall not be regarded as included in the inquiry or counted. All cases examined by Dr. Stevens shall be classified in two categories: first, an examination shall be made to show how many of the cases sent presented ocular defects; second, an examination shall be made of the cases with ocular defects to show the results of treatment. The two categories may be separately or comparatively utilized. All medicinal treatment shall be suspended while the patient is under treatment by Dr. Stevens, unless intercurrent conditions arise requiring attention, and such shall be noted in the history.

6. The Commission shall report to the Neurological Society at its meeting in November, 1887, and subsequently as it may decide, the comparative physical and mental state of the patient before and after treatment being stated in such reports. A copy of each report shall be furnished to Dr. Stevens prior to its submission to the Society.

7. The Commission shall consist of three neurologists, and two ophthalmologists, appointed by the President of the Neurological Society and of Drs. E. L. Dana and F. P. Foster, selected by Dr. Stevens.

8. The times and places of examining and operating upon the cases shall be or arranged as to occasion no inconvenience to Dr. Stevens. The members of the Commission agree to be present at the times and places appointed so far as it is in their power.

DIFFICULTIES ENCOUNTERED BY THE COMMISSION.

The clear intent and meaning of par. 4 and 5 are, we believe, that Dr. Stevens should furnish copies of his notes of cases to the Commission for filing, either through "some member of the Commission," or directly through the Secretary.

This interpretation of the clause has on several occasions been brought to Dr. Stevens' attention by the Commission, but he has persistently declined to furnish the data in question.

At a meeting of the Commission held Oct. 7, 1888, it was resolved that "Dr. Stevens be requested to forward notes of the cases under his care to the Secretary." A correspondence ensued between the Chairman and Dr. Stevens (*vide* Exhibit A), at the close of which Dr. Stevens positively refused to furnish the data requested. Dr. Stevens' last note on the subject, dated Nov. 29, 1888, closes as follows: "I may add that there is nothing in the agreement which calls for a report from me until the time for a final summing of the work arrives. Permit me also to remind you that you have had, from time to time, reports of the ocular conditions of these patients. The conditions at the beginning were observed and recorded both by the oculists and myself. Our records agree, and they report the result to the Secretary. At each operation, if one is made, the oculists again make a record of the conditions before and after the operation, and this record also agrees with mine. Beyond this I must absolutely decline to send to the Commission running reports of the work. The book of these cases is always open to the oculists."

Signed,

GEO. T. STEVENS.

If any one will compare this statement with the provisions of Par. IV. and V. of the Agreement, he will be at once convinced that Dr. Stevens violated both the spirit and the text of the compact. Inasmuch as Dr. Stevens has not furnished the Commission with reports of the cases, or copies of his various notes of them (or allowed of copies being made at the Commission's expense, as was proposed), it will be evident the Commission has labored under serious difficulties.

In addition to refusing notes of the cases, Dr. Stevens has retained in his possession the only existing notes of one case, to the serious inconvenience of the Commission. (*vide* Exhibit B.)

In Dr. Stevens' final reply to the Commission's request for copies of all notes of cases for filing in the Secretary's hands, it is stated that "the book of these cases is always open to the oculists."

Acting upon this invitation, the Commission in December, 1888, delegated Dr. Wm. Oliver Moore to go to Dr. Stevens' office and copy or cause to be copied at the Commission's expense the records of the cases treated by Dr. Stevens. This Dr. Moore was not permitted to do.

As provided for in the agreement your Commission made a report in November, 1887, but this was of necessity only a report of progress. During the autumn of 1888, as numerous cases had been under treatment by Dr. Stevens for many months, it was discussed at several meetings of the Commission when a final report should be made. Preliminary to the planning of a report it was necessary to collect all the data relative to cases which had been sent to Dr. Stevens. This was made difficult by Dr. Stevens' refusal (on November 29th) to furnish his notes of the cases. Prior to this an attempt was made by your Commission to induce Dr. Stevens to fix a limit of time of treatment as determining the success or failure of treatment in any given case. At a meeting held April 8th, 1888, it was resolved: "That the Secretary obtain a statement from Dr. Stevens as to the minimum and maximum limit of time which he will consider satisfactory for cases to be submitted to him

in future by the Commission." For certain reasons the Chairman was ultimately delegated to see Dr. Stevens about this matter. The following is Dr. Seguin's report to the Commission of this consultation, dated April 14, 1888 :

"To the second request of the Commission, that he should state a minimum and maximum time of treatment for purposes of report, or even of record in the Commission's minutes, Dr. Stevens returns a decided negative. After further conversation, Dr. Stevens proposed that when twelve cases shall have been placed under treatment, all together, a report should be made when the last case admitted to the list shall have had six months treatment." (Exhibit C.)

It was evident to the Commission that under the last-named condition a report would be indefinitely postponed, or indeed never made, inasmuch as patients were constantly dropping out.

In considering the request of the Commission for an agreement as to limit of trial of treatment, reference should be made to Dr. Stevens' publications. In these, the reported cases improved immediately after the operation, or after the correction of errors of refraction, and the statement is made that within a few months after treatment no convulsions recurred, and no choreic movements remained ; but this is not supported by definite chronological data.

Dr. Stevens has found fault with the Commission because a large number of cases was not furnished him for the experiment. The members of the Commission exerted themselves honestly to send as many cases as possible to Dr. Stevens ; and in April, 1888, the Commission sent printed postal cards to all the members of the Neurological Society, requesting them to send in cases for the advancement of the inquiry. This appeal proved almost useless. Furthermore, from the first the Commission has accepted such cases as Dr. Stevens himself selected, after examination by members of the Commission in accordance with the agreement, to the number of six. In fact some members of the Commission were at times obliged to use much per-

suasion, and, in many cases, to argue in favor of the trial in order to induce their patients to go to Dr. Stevens. More than that, in several instances, when patients sent to Dr. Stevens grew discouraged by the failure of the treatment, members of the Commission used all their powers of persuasion to cause them to persevere. We can truly say that in this respect we have earnestly tried to favor the efficiency of the inquiry. Lastly, the members of the Commission have refrained, sometimes under very trying circumstances, from publicly expressing any opinions as to the progress of the investigation. If Dr. Stevens has not had as many cases sent to him as he had expected, it has certainly not been through any lack of coöperation on the part of the members of the Commission.

REASONS FOR REPORTING AT THE PRESENT TIME.

The Commission regret to be obliged to report without Dr. Stevens' co-operation, but it seems to us that further delay would be discourteous to the Society, which has waited so patiently, and unfair to the medical profession, which, we have reasons to believe, is anxious to know how Dr. Stevens' method has resulted, and whether it can be recommended for the treatment of epilepsy and chorea.

In the month of April last it was proposed to prepare a report on these grounds, but some members of the Commission thought that nothing would be lost if we granted a request made by Dr. Stevens, through Dr. Birdsall, that more cases be furnished, and the report postponed until November.¹¹ This was agreed to.

This limit of time has now expired. Four new cases have been sent to Dr. Stevens, and three of these have remained under treatment up to the present. Dr. Stevens himself added no cases to this series.

It will be observed that Dr. Stevens' letter¹² of last April

¹¹ COPY OF DR. BIRDSALL'S LETTER TO THE SECRETARY OF THE STEVENS COMMISSION;—"Dr. Stevens stated that if we would send him four acceptable cases within a month, he would agree to a final report in November, provided one or more of the four patients continue until November, but not if they drop out. Sincerely yours," W. R. Birdsall. April 23, 1889.

¹² The letter referred to was Dr. Birdsall's letter, not Dr. Stevens' letter.

(*vide* Exhibit D), contains two distinct propositions. One states that he would like four more acceptable cases; the other that: "one or more of the four patients continue under treatment until November." Of these two conditions the important or vital one is the latter. It would certainly make no difference how many acceptable cases were sent to Dr. Stevens, provided "one or more remained under treatment." This has taken place. Three (3) of the cases have so remained under treatment, and this fact, together with the general reasons already stated, led the Commission at a meeting held Oct. 13th, to decide to submit this report.

Still, we desired Dr. Stevens' co-operation, and to this end Dr. F. P. Foster was delegated at the meeting of Oct. 13th to see Dr. Stevens and ask whether he would now be willing to furnish the Commission with the data in his possession. Dr. Foster reported as follows (Exhibit E): "Dr. Stevens still declines to furnish us with the notes of the progress of the cases. He does not demur to the dates on the list, but he made remarks about two of the patients that I have added in red. He made out a list himself (which I herewith inclose) of those patients that he is willing to have counted." (Signed), FRANK P. FOSTER.

Dr. Stevens upon learning that the Commission had decided to present a report, sent to the Secretary, under date of Oct. 23d, a written request that more time be allowed for the further observation and treatment of the cases, and that the report be postponed until March or April of next year (Exhibit G). This proposition was carefully considered at a special meeting held Oct. 27th, and by a unanimous vote it was decided to report at once.

The data in possession of the Commission are imperfect and in some respects unsatisfactory. This is not the fault of the Commission, but is solely owing to Dr. Stevens' withholding of his notes.

Altogether, 28 cases have been placed on the list of accepted cases (six of these being furnished by Dr. Stevens). The following summary of these cases has been prepared by Dr. Starr, and will serve as the basis for the conclusions of the Commission.

THE WORK OF THE COMMISSION.

After the plan of proceedings had been agreed upon the members of the Commission began to send patients to Dr. Stevens in April, 1887.

Each patient was examined by two neurologists, who agreed upon the diagnosis and compiled a history of the case. The patient was then sent with the history to Dr. Stevens, who examined the ocular conditions. Subsequently the ophthalmologists examined the eyes and reported their results to the Secretary, who added these notes to the copy of the history in his possession. When an operation was undertaken notice of it was sent by Dr. Stevens to the Secretary, and he in turn notified the ophthalmological members and the neurologist who had sent the patient. These members then attended the operation and noticed the conditions found in the eyes before and after it, sending their records to the Secretary. Their non-attendance, however, did not prevent operations from being done, and it is the records of these operations as well as records regarding prisms and glasses prescribed by Dr. Stevens for the patients, which Commission has been unable to obtain.

The patients have from time to time visited the members of the Commission by whom they were sent to Dr. Stevens, and notes of the condition found have been made and sent to the Secretary. In the cases of epilepsy the record of attacks has not in all cases been kept in duplicate, Dr. Stevens having the record on the blanks furnished by the Commission, and in these cases the records have not been accessible.

The following brief summary of the history of each case is given in order that the Society may be informed of the character of the cases selected and of the result in each case.

The cases are arranged in two classes :

First.—Those which are counted by the Commission in accordance with the agreement.

Second.—Those which have been withdrawn and are not counted.

CASE 1.—Elizabeth C., æt. 13½ ; disease, chronic chorea ; Dr. Seguin. This girl, who had had one attack of chorea had not recovered from her second attack, which had become chronic, and had been continuous from September, 1885, to April, 1887, when she was sent to Dr. Stevens. There was found an ocular insufficiency which was treated by the use of prisms and by operations. The first improvement appeared 30 weeks after beginning treatment. Since that time very little continuous improvement has occurred. At times the chorea has been worse, at times she has been almost free from chorea. For the past two months, September and October, 1889, she has been free from chorea, except slight manifestations in tongue and hands for a few days before each menstrual period. She is not cured, as there are occasional slight recurrences of chorea. She is greatly improved. But such periods of improvement having occurred under other forms of treatment. Dr. Seguin expresses his deliberate opinion that the ophthalmic treatment has had very little if anything to do with the improvement. She has had 13 operations, the last being done March 22, 1889, and has worn 8 different forms of glasses. At present she has diplopia for near and far distance, an ocular defect acquired during treatment.

OPHTHALMOLOGICAL REPORT.

“ R. V. = $\frac{20}{15}$; Hm. o. 25 D.

L. V. = $\frac{20}{15}$; Hm. o. 25 D.

Hyperphoria 0°, exophoria 1°, in accommodation 4°, sursumduction R. $\frac{3}{4}$ °, L. $\frac{3}{4}$ °, abduction 5°, adduction 16°. Opthal. normal; movements of eyes do not seem limited in any direction; no diplopia on testing with red glass. Patient says she has had thirteen operations; that when she looks up suddenly from reading she sometimes sees double, and that her eyes smart and burn and run water she reads. Her mother says she does not complain of it very often. There have been very few manifestations since last May.”

Oct. 29, '89.

D. WEBSTER.

CASE 2.—Flora K., æt. 20 ; disease, epilepsy ; Dr. Starr. This patient, who has well marked epilepsy, had been under

observation for four years during which time under treatment she averaged about five attacks a month of grand mal of varying degrees of severity—only four attacks during the year 1884 having been very severe—with visible injury. She was put under Dr. Stevens' care on April 22, 1887, and has been most faithful in her attendance until the present time. Insufficiency of the ocular muscles was found, and has been treated by the use of numerous kinds of prisms and by eight operations upon the muscles. During this period her average has been fifteen attacks every month, the extremes being five as the least number and twenty-two as the greatest number of attacks in a single month. There were ten very bad attacks during the year 1888 accompanied by visible injuries. The ocular treatment has, therefore, after a continuous trial of two and one half years, utterly failed to ameliorate her epileptic condition, and has been of positive harm, since the slight attacks are three times as frequent, and severe attacks are more frequent than under other methods of treatment.

24 mo. under bromides, - - 123 attacks.

24 " " ocular treatment, 362 attacks.

OPHTHALMOLOGICAL REPORT.

On Oct. 31, 1889—"She had abduc. 7° , adduc. 15° , exoph. 3° at 20 feet, 6° at 20 inches. She has crossed diplopia with red glass in the middle and upper field when looking to the right $V=\frac{20}{20}$."

W. O. MOORE.

CASE 3.—John McG., aet. 14; epilepsy; Dr. Stevens. This boy has had epileptic attacks, consisting of dizziness followed by unconsciousness and twitching of one extremity, never in the past eight years having had a general convulsion. He can sometimes control these attacks by running about or by putting cold water on his face. The attack occurs once or twice a day, but every month he has a remission of a week, and he occasionally has an interval of two or three days without an attack. The patient was selected by Dr. Stevens and accepted by the Commission, having been found to have muscular insufficiency. He was

operated upon four times between May 3d and Oct. 27th, 1877, during which time he had 22 attacks.

This result indicates a certain amount of improvement, the frequency of the attacks having diminished. The attacks, however, had not ceased when Dr. Stevens, on Oct. 27, 1887, reported the improvement, and no subsequent report has been made. The case, therefore, was in no sense cured.

In Dr. Stevens' report he states that during 167 days, 22 attacks have occurred, while under circumstances similar to those preceding his ocular treatment there would have been expected 167 attacks, or, on an average, one per day. To this statement an exception must be taken, since the history stated that he had intervals of two or three days without attacks and a remission of a week in every month. This is the only case in which any notes have been furnished the Secretary by Dr. Stevens.

CASE 4.—George K., æt. 13, chronic chorea, Dr. Seguin. This boy had been subject to chronic chorea for five years prior to his being sent to Dr. Stevens on May 20th, 1887. For six months prior to May he had suffered from coprolalia as well as from electric chorea. Under Dr. Seguin's care from February 25th to May 20th his condition had varied, (*and the coprolalia ceased*) there being at times a marked improvement followed by relapses. He was found to have ocular insufficiency, and during the past two years he has had twelve operations and has worn twelve different glasses. The case has not been cured or much relieved by the two years of ocular treatment. The coprolalia (*grunting*) disappeared for a time, but reappeared, and has varied in severity. Twenty-eight weeks, and again fifty-two weeks after treatment was begun, it was noted that the chorea was as bad as at first. It still persists, but at present he may be said to be improved. He now has double vision on looking to the right.

OPHTHALMOLOGICAL REPORT.

"V.— $\frac{20}{15}$; L. hyperphoria $\frac{1}{4}^{\circ}$; esophor $\frac{1}{2}^{\circ}$ in accom. 2° ; abduc. 7° ; adduc. 30° . Opthal. normal; fields normal; sursumduction R. $\frac{3}{4}^{\circ}$, L. 1° ."—D. WEBSTER. Oct. 31. '89.

CASE 5.—Aggie H., æt. 13, epilepsy, Dr. Dana, Dr. Fisher. This girl suffered from attacks of petit mal, only having from two to four every day. She has had such attacks for two years. She was sent to Dr. Stevens on January 3d, 1888, and though orthophoria was present was thought to have "latent" hyperphoria. Operations were performed upon this patient in January and February and November, 1888, and in January, March and September, 1889; but no records have been furnished to the Secretary of the exact number of attacks. In November, 1888, she was having from three to four attacks daily, and in March, 1889, she is still having seizures every day. The mother thinks she is better.

The result of the ocular treatment pursued with regularity for fifteen months seems to be entirely negative.

OPHTHALMOLOGICAL REPORT.

May 13, 1889—"Esophor 5°, abduction 5°. She is wearing prism 1°, base out over each eye. Tenotomy of right intermus done to-day leaving orthophoria and abduction 8°." D. WEBSTER.

CASE 6.—C. D., female, æt. 9, epilepsy, Dr. Stevens. This girl has had epilepsy, both grand and petit mal, for six years, and is feeble minded. "In the grand mal attack there are convulsive movements at first. Often the attack is ushered in by a scream. Attacks vary from two to ten minutes, and after them she is sometimes drowsy." These occurred for the past two years about once every other day, and for the past three months every day. Petit mal attacks occur also from once in a few days to many times in the same day. Dr. S. referred her to the Commission March 30th, 1888. The only note regarding this case received is a description of one operation on April 20th for tenotomy of the right superior rectus. On November 7th Dr. Stevens wrote Dr. Dana that the girl was taken in to the country in July, but that her aunt called upon him in September and said that the child was improved.

The last of definite information regarding the number

and character of the attacks prevents any conclusion as to the result of treatment.

CASE 7.—E. F., male, æt. 14, chorea, Dr. Stevens. This boy, the subject of chronic chorea for several years, was referred to the Commission on March 30th, 1888, by Dr. Stevens. The chronic movements were of the electric type, general, and accompanied by a barking sound.

No notes of the ocular conditions have been received.

On April 20th a tenotomy of the right superior rectus was made, as stated by Dr. Moore.

On November 26th Dr. Webster reports a condition of insufficiency of the muscles.

No statements regarding this case have been obtained, hence no conclusions regarding the result can be given. In a letter of Dr. Stevens, dated November 7th, 1888, he is alluded to as "the chronic boy."

CASE 8.—G. H., male, æt. 10, epilepsy, Dr. Stevens. This boy had epilepsy since the age of three, having a grand mal attack very rarely, never oftener than three in a year, last attack nine months before treatment was begun.

He also had attacks of epileptic vertigo followed by mental confusion, without any convulsive movements. These occur once in three or four weeks and are controlled by chloroform. He also has attacks of petit mal several—three or four—times daily. He was submitted to the Commission by Dr. Stevens, March 30th, 1888. No notes regarding his ocular condition were furnished. On the 12th of April and 3d of December, 1888, operations were performed upon the left and right interni respectively. A report made May 25th states that he has had no grand mal attacks, but had feared an attack of vertigo on April 27th, but had fought it off. No statement regarding the petit mal and no record of attacks is at hand. He was seen by Dr. Birdsall March 31st, 1889. He then stated from memory that he thought he had no attacks of vertigo, but that he had one grand mal attack in February, 1889. Through lack of definite data no conclusion can be drawn from this case.

CASE 9.—David S., æt. 12, epilepsy, Dr. Starr. This boy had epilepsy since the age of fifteen months, having from one to five severe and from two to five slight attacks every month under bromide treatment. He had been treated by Dr. Starr for six months. During four months (December, February, March, April) he had nine severe and fifteen slight attacks. On April 23d he was referred to Dr. Stevens, who found insufficiency of the ocular muscles. He was under treatment from April 23d to Sept. 25th, attending at least three times a week. He was operated upon several times, and wore glasses constantly. During these four months he had thirty severe and nineteen slight attacks, or an average of seven severe and nineteen slight attacks every month. At the end of this time, as he seemed to be worse rather than better, his mother refused to continue the treatment, although urged to do so. The result of stopping the bromide in April was the occurrence of nine severe fits between May 6th and May 9th. Severe fits occurred in September at the time of his father's death. But aside from these attacks the record shows that the number of fits under ocular treatment was greater than under bromide.

Oct. 31, '89.—“ *He is now under bromide treatment by Dr. Jacoby. He had three severe and two slight attacks in September; two severe and three slight attacks in October; about the same number as before ocular treatment. V. = $\frac{20}{15}$, abduc. 7° , adduc. 19° , esophor 4° , L. hyperphor. $\frac{1}{2}^{\circ}$.* STARR.

CASE 10.—Eva S., æt. 1, chronic chorea; Dr. Starr, Dr. Fisher. This girl has had chronic chorea of a mild type for three years preceding May 4, 1888, when she was sent to Dr. Stevens.

She has been in constant attendance up to the present time. Has been operated upon four times during the year and has worn glasses constantly.

The chorea has varied from time to time; has been somewhat better at times, and then again as bad as at the outset. In November, 1888, it had extended from the body and neck to the face and larynx, expiratory sounds being

quite frequent. This had not developed before and passed off after a few months.

As the result of the year's treatment there is no cure, and no marked change in the choreic condition. Her movements now, October, 1889, are about the same as at the outset.

OPHTHALMOLOGICAL REPORT.

"Eva S. has had six operations upon her eyes. She is wearing R + 2.75 D.C. axis 105° ; L. + 2.75 D. C. axis 75° ; and with these glasses her vision is $\frac{20}{30}$ +. R.V.— $\frac{20}{70}$ — $\frac{20}{20}$ —with + 2.25 D. C. axis 105° ; L. V. = $\frac{20}{70}$ — $\frac{20}{20}$ —with + 2.50 D. C. axis 75° . Orthophoria with or without her glasses; abduction 6° ; adduction 36° . Opthal. no lesion observed. No diplopia."

WEBSTER.

CASE 11.—Miss L. P., æt. 15 ; chronic chorea ; Dr. Stevens. This girl was both choreic and hysterical, the irregular movements being very marked and her mental irritability and instability evident. She is subject to hysterical fancies. Her motions are partly choreic, partly wilful.

She was submitted to the Commission on July 5, 1888. No records of the eye conditions of treatment, or of present condition have been received. A letter from Dr. Stevens, dated November 7th, 1888, indicated that she was still under treatment at that time.

Dr. Webster saw the patient at Dr. Stevens' office, May 31st, 1889. She was operated upon several times for hyperphoria and the condition of exophoria is now present ; she still had slight choreic movements, but said that she was much better. It seems that she had been subject to incontinence of urine—a fact not mentioned in her history—which had made her life miserable. This condition has ceased during the past year so that she now enjoys life. Present condition of eyes unknown.

CASE 12.—E. W., æt. 24 ; epilepsy ; April 25, 1889 ; Dr. Dana, Dr. Starr. She began to suffer from epilepsy at the age of 19. Slight seizures increased in frequency ; until October, 1888, she was having 2 or 3 daily. During the

summer of 1888 she had 4 general convulsions. Under bromide treatment she was having petit mal about 2 or 3 times every two weeks, usually at time of menses.

She was found to have very marked insufficiency of the ocular muscles and was accepted by Dr. Stevens as a good case in April, 1889. During the summer four operations have been recorded.

At present (October 25) she says that she has had one severe fit during the summer (viz., May 23d) and is now having and has had two or three attacks of petit mal monthly. She is therefore improved.

OPHTHALMOLOGICAL REPORT.

Nov. 4.—“She has been operated upon nine times. R. V. $\frac{20}{30}$ with — 4 D.; L. V. $\frac{20}{70}$ with — 9 D. Hyperphor. 0° , exophor. 2° , with her myopia corrected. Esophoria 1° . Opthal. exam. large staphyloma posticum in both eyes.”

D. WEBSTER.

CASE 13.—Mary McK., æt. 31; epilepsy; Dr. Dana. Patient had migraine from age of 12 and epileptic seizures of petit mal type since age of 22. She had been having two to three such attacks monthly when first seen in March, '89, by Dr. Dana. She was reported to the Commission April 25th, having had 8 attacks in April. She was found to have insufficiency of the ocular muscles. Bromides were stopped May 1st and during the summer she has been operated upon several times. She said (September 10th) that she was better and says her attacks are lighter. The record, however, shows that she had on May 9th, on June 12th, on July 22d, attacks of which 3, 4 and 2 respectively were severe. On August 1st, severe attack, on the 19th, the last recorded. During September she had four, during October she had 5 attacks of petit mal.

It is evident that she is now having fewer attacks than she had under bromide treatment in April. The number of attacks, however, is about the same as when she first applied to Dr. L. Dana, viz.: three to four monthly.

CASE 14.—Agnes H., aet. 31; epilepsy; Dr. Birdsall. This patient has had severe epileptic attacks for ten years

at long intervals, and slight attacks frequently. Thus, on Jan. 9, Feb. 6, March 11 and April 15, slight attacks occurred, and a series of seven severe attacks within four days in April, during a cessation of bromide treatment. She was referred to Dr. Stevens on April 25th. She was found to have an insufficiency of the ocular muscles, and has been under treatment up to the present time (Oct. 22nd). She had 29 attacks in May, 20 in June, 30 in July, 24 in August, and says that she has had one every day for the past month. During these five months she has also had four severe fits.

Her general condition is about the same. Her attacks are more than twice as frequent as under bromide treatment, and no improvement has been noticed during the past month.

OPHTHALMOLOGICAL REPORT.

"R. V. $\frac{20}{15}$ + in each eye but sees $\frac{20}{15}$ with both eyes at once with + 1 D. accepts no glass with either eye singly. Hyperphor. 0° , esophor. 1° to 2° in accom. exophor. 9° , abduc. 5° , adduc. 27° . Sursumduction, R. 1° , L. 1° . Opthal. exam. shows pale temporal halves of discs. Visual field normal. No diplopia."

D. WEBSTER.

The following are summaries of the histories of the cases submitted to Dr. Stevens and subsequently withdrawn, with the reason for withdrawal.

These are the cases not counted according to the plan.

CASE 15.—Elizabeth K., aet. 25; epilepsy; Dr. Dana. This patient had suffered from attacks of petit mal since the age of eleven, and from grand mal since the age of thirteen. She has had several fits every week for two years, and occasionally suffered from a series of fits followed by a period of mental aberration. Under Bromide and pepsin she had been having from one to three attacks of grand mal every week.

She was referred to the Commission, on April 6th, and found to have insufficiency of the ocular muscles. She was operated upon by Dr. Stevens, on April 18th. She was

very irregular in her attendance, not being able or willing to follow up the treatment with regularity, and therefore, after one month, was withdrawn by mutual consent.

No data are in possession of the secretary regarding her further history.

CASE 16.—Stephen W., æt. 17, Epilepsy, Dr. Dana.—This boy had right hemiplegia with aphasia at the age of four, slight traces of the former remaining. He developed epilepsy at the age of thirteen, the spasms being at first mulateral, but after a year becoming general. Without bromide he rarely goes more than two or three days without an attack.

The epilepsy was thought to have an organic basis in a cicatrix in the left cerebral hemisphere, but in spite of this statement Dr. Stevens accepted the case and it was put under his care on May 19th, 1887.

Ocular insufficiency was found, and he was operated upon twice during June by Dr. Stevens. In October, however, having had eleven attacks every month during the summer, and not being improved, Dr. Stevens requested that he be withdrawn and not counted in the cases on the list. This was therefore done.

CASE 17.—Mary L., æt. 30, Epilepsy, Dr. Stevens.—This girl, a servant suffering from nocturnal epilepsy, was submitted to the Commission by Dr. Stevens and accepted in May, 1887. It was found, however, that she could not attend with sufficient regularity and her case was therefore dropped from the list.

No notes have been furnished to the Secretary regarding her original condition, as she was seen but once by Dr. Stevens.

CASE 18.—John C., æt. 21, Dr. Seguin.—This patient who had suffered from epilepsy since a sunstroke at the age of nine, had attacks of grand mal about once in two weeks. He was sent to Dr. Stevens on May 20, 1887, and all medicine was stopped. He was found to have insufficiency of

the ocular muscles, and an operation was performed on June 6th. This operation was followed by a series of severe convulsions, thirty-one occurring within a month. In view of these attacks the patient and his friends expressed unwillingness to go on with the treatment, and he was withdrawn from Dr. Stevens care on July 25th.

After resuming bromide treatment he had but one attack in August, and but one in September. In October he had access of attacks, twenty occurring in two days while on a visit to Boston, but he had none between October 3d and January 1st, 1888.

Dr. Seguin believes that the status epileptus produced by the cessation of medical treatment would probably have proved fatal had bromides not been resumed in July.

CASE 19.—Patrick H., æt. 22, epilepsy, Dr. Dana.—This patient had epileptic seizures, both grand and petit mal, daily, though at times he would go a week without an attack. He was sent to Dr. Stevens September 20th, 1887, and found to have insufficiency of the muscle of the eye.

He was operated upon twice during October, 1887, and on November 4, 1887, was found by Dr. Moore to have no insufficiency. He discontinued going to Dr. Stevens during December and January, but on February 22d a third operation was performed. The record of attacks during October, November and December is imperfect or lost. During January, 1888, he had twelve attacks of petit mal, four attacks grand mal. During February, 1889, six of petit, five of grand. During March, fourteen petit, three grand. On April 2d patient said he had fewer attacks than before the treatment was begun, but circumstances prevented his continuing attendance. From April to December, 1888, his fits were somewhat less numerous than before treatment, but the change is slight. He may be said to be improved.

CASE 20.—John S., aet. 38; epilepsy, Dr. Dana, Dr. Nilsen. This patient had nocturnal epilepsy, one attack every month of grand mal type, from December, 1855, to May, 1887, and two attacks per month in August, September and October, 1887.

He was sent to Dr. Stevens on October 30, 1887, and muscular insufficiency was discovered.

No records of treatment have been furnished, and probably none was pursued, for the patient could not attend regularly, and his name was therefore withdrawn. It is interesting to learn that under bromides and oxide of tin he has now March, 1889, gone a year without any attacks.

CASE 21.—Jennie P., aet. 25 ; epilepsy, Dr. Seguin. The patient had suffered from epilepsy for several years, having both grand and petit mal attacks.

She was sent to Dr. Stevens December 20th, 1887, and was found to have ocular insufficiency. She was operated upon three times. Her attendance having been irregular, she was withdrawn within a month by mutual consent.

The history of this case is imperfect. It is in the possession of Dr. Stevens, and no copy having been taken and access to the history having been refused by Dr. Stevens, all data are wanting.

CASE 22.—John D., aet. 29 ; epilepsy, Dr. Dana, Dr. Leszynsky. This patient had grand mal and petit mal attacks. He was referred to the Commission on March 1, 1888, and was found to have an insufficiency of the muscles, for which prisms were given. An operation was appointed for April 6th. No notes of this are at hand. But on April 30th Dr. Stevens requested that he be withdrawn from the list, his social relations being not such as to make him a good subject for a test case.

CASE 23—A. B., male, aet. 16 ; epilepsy, Dr. Stevens. This patient who had had epilepsy since the age of one year, was referred to the Commission by Dr. Stevens on February 28, 1888. The history submitted gives no account of the number or character of the attacks, of the conditions found in the eyes or of any operations performed. A note of Dr. Birdsall states that on May 28th the notice says that the attacks have been less frequent. He was taken abroad in July, and his failure to return led Dr. Stevens to withdraw the case from the Commission on February 27th, 1889.

CASE 24.—Alfred B., aet. 26; epilepsy; Dr. Dana, Dr. Jacoby. The patient had well marked epilepsy, with attacks of grand mal occurring from three to four times every month, and attacks of petit mal, both day and night, from five to seven daily.

Under bromide the severe attacks had been reduced in number to one or two a month, and the petit mal had been controlled at one time by nitro-glycerine for fifteen months, in 1884-85. He was referred to the Commission on April 10, 1888, and examined by Dr. Stevens, who found an insufficiency of the ocular muscles. Two operations were performed April 13th and May 4th, and glasses worn constantly until the latter part of June, 1888. He had one grand mal attack in April; four in May; three in June, and his attacks of petit mal did not diminish. In June he discontinued attendance voluntarily and refused to return. Between July 1st and December 1st he averaged three attacks of grand mal monthly. No improvement was produced by the treatment, and he was not counted, as he withdrew within three months.

CASE 25.—Adolph S., aged 23; epilepsy; Dr. Dana, from Dr. Leszynsky. This patient had petit mal attacks at the age of eleven, and grand mal attacks at the age of twelve. At the present time he has a general convulsion about once a month and attacks of petit mal every week. During February, 1888, under bromide treatment he had one grand mal and six petit mal attacks.

He was referred to Dr. Stevens on February 29, 1888.

No records of the ocular conditions have been furnished. The patient was operated upon once, but was so irregular in his attendance that he was withdrawn soon after by mutual consent. A letter from Dr. Leszynsky, dated April, 1889, contains the statement that the patient is still visiting Dr. Stevens, but is not in any way improved; his mother reporting that his attacks are becoming worse.

CASE 26.—Mrs. Q., aged 26; epilepsy; Dr. Dana. This patient, suffering from a very severe type of grand mal, with

several daily attacks, was sent to Dr. Stevens, November 24, 1888, but was at once withdrawn because of his objection to the patient, who was unpresentable and had several attacks in his office.

CASE 27.—Tillie L., aged 18; epilepsy; Drs. Jacoby, Starr, Dana. The patient had suffered from epilepsy from the age of twelve, and for the past two years had been having about two attacks every month, all recent attacks having been nocturnal. They are of the grand mal type.

The patient was at work, and could not afford to attend with sufficient regularity, and therefore, by mutual consent, was withdrawn.

CASE 28.—Anna B., aged 29; epilepsy; Dr. Seguin. This patient developed epileptic attacks at time of first menses, and these have continued up to date. She has been under treatment since 1880 at intervals, and presents no other symptoms than those of epilepsy; no evidence of cerebral or spinal disease.

She has from two to five attacks monthly.

She was sent to Dr. Stevens on April 25th, but rejected by him on the ground of the existence of optic-nerve atrophy, visual field in one eye contracted one-half. Hence withdrawn.

SUMMARY OF THE WORK OF THE COMMISSION.

Total number of patients examined by the Commission, and sent to Dr. Stevens for examination.	-	28
Suffering from epilepsy,	-	23
" " chronic chorea,	-	5
Number of cases found to have ocular insufficiencies,	-	28
Number of cases withdrawn without any treatment,	-	5
" " " within 1 month after exam.,		3
" " " " 2 months " "	-	1
" " " " 3 " " "	-	1
" " " " 4 " " "	-	2
" " " " 5 " " "	-	1

REASONS FOR WITHDRAWAL OF PATIENTS.

Inability of patient to attend regularly,	-	-	-	5
Declined by Dr. Stevens on ground of organic disease,				2
Mutual consent of Dr. Stevens and member sending case, for satisfactory reasons, such as non-attendance,	-	-	-	5
Discontent of patient because of increase of symptoms,				3
Number of cases continuing treatment for four months or over,	-	-	-	15

DURATION OF TREATMENT IN THESE CASES.

4 months,	-	-	1	12 months,	-	-	1
5 "	-	-	5	18 "	-	-	1
6 "	-	-	1	21 "	-	-	1
8 "	-	-	1	29 "	-	-	1
10 "	-	-	1	30 "	-	-	2

It will be seen from the summary that of the twenty-eight cases sent to Dr. Stevens but fourteen are available for any conclusions, the others having been withdrawn for some reason, and therefore not being counted according to the Plan of Proceedings.

The following table contains numbers of the cases under treatment continuously for a period exceeding four months; the duration of treatment in each case; the date at which the patient was sent to Dr. Stevens; the date of the last report of the condition of the patient, and a statement of the apparent result of treatment.

For details regarding each of these fourteen cases the Commission has appended the full history of each case. (*Vide Exhibit F.*)

Case.	Duration of Treatment.	Date of First Visit.	Date of Last Report.	Result.	Result.*
1. Chorea.	30 months.	April, '87.	Oct. '89	Improved.....	
2. E	0	April, '87.	Oct. '89	Not Improved..	
3. E	5	May, '87	Oct. '87	Improved.....	
4. Chorea.	29	May, '87	Oct. '89	Slightly Imp'd..	<i>Improved.</i>
5. E	21	Jan. '89	Oct. '89	Not Improved	
6. E	4	Mar. '88	July, '88	Unknown . . .	
7. Chorea.	8	Mar. '88	Nov. '88	Not Improved..	
8. E	12	Mar. '88	Mar. '89	Unknown.....	<i>Improved.</i>
9. E	5	Apr. '88	Sept. '88	Not Improved..	
10. Chorea.	18	May, '88	Oct. '89	Not Improved	
11. Chorea.	10	July, '88	May, '89	Not Improved.	<i>Improved.</i>
12. E	6	Apr. '89	Oct. '89	Improved.....	<i>Slightly Imp'd.</i>
13. E.....	5	May, '89	Oct. '89	Not Improved..	
14. E	5	May, '89	Oct. '89	Not Improved..	

* Corrections only noted.—ED.

A summary of these 14 cases shows :

Total cured, - 0
 Total improved, 5 One very much improved.
 Total unimproved, 8
 Total unknown, 1

A summary of these 14 cases shows:

*Total cured, - 0
 Total improved, 6 One very much improved.
 Total unimproved, 7 Two slightly improved.
 Total unknown, 1*

	Total cured	 0	
C. Chorea, 5.	Total improved	 5	3 Chorea, 2 Epil psy.
	Total unimproved	 8	2 Chorea, 6 Epilepsy.
E. Epilepsy, 9	Total unknown	 1	Epilepsy.
	<i>Total cured</i>	0	
C. Chorea, 5	<i>Total improved</i>	6	3 Chorea, 3 Epil psy
	<i>Total unimproved</i>	7	2 Chorea, 5 Epilepsy
E. Epilepsy, 9	<i>Total unknown</i>	1	Epilepsy.

It will be seen that five (*six*) of the patients are at present improved. These are :

Case 1.—Eliz. C., - Chorea, - Dr. Seguin.
 “ 3.—John McG., Epilepsy, - Dr. Stevens.
 “ 8.—G. H., - Epilepsy, - Dr. Stevens.
 “ 11.—Miss L. P., Chorea, - Dr. Stevens.
 “ 12.—Gertrude W., Epilepsy, - Dr. Dana.
 “ 4.—George K. - Chorea, - Dr. Seguin.

In regard to (1) the first improvement took place thirty weeks after treatment was begun, and the condition has not been one of constant improvement, but of considerable variation in the choreic state. At times the girl has been better, at times worse. On October 23, 1889, she was free from chorea. *At no time has she been free from chorea for one month.*

In regard to (3) the epileptic attacks were of the nature of vertigo, the patient never having had a convulsion. He was able to control these attacks at times by running about,

or by applying water to the face. The history states that the attacks occurred once or twice daily, but that every month there was an intermission of a week, and occasionally he had two or three days without an attack. He had no attacks for a week before treatment was begun. No exact record of attacks before treatment, is given. During five months of treatment he had twenty-two attacks, and the attacks had not ceased when, in October, 1887, Dr. Stevens reported improvement. No further report has been obtainable.

In regard to (8) the patient had epileptic attacks of several kinds—a general convulsion once or three times yearly, epileptic vertigo once in three or four weeks, and petit mal several times daily. When last seen he had had one convulsion after a year of treatment, and he stated from memory that he had had no attacks of vertigo for some time. He made no statements regarding petit mal attacks, of whose occurrence he was ignorant. No records have been obtainable and hence no exact conclusion can be drawn, excepting one of general improvement (*in respect to attacks of vertigo*).

In regard to (11) the girl had chronic chorea, was very hysterical, and had incontinence of urine which made her life miserable. During the year of treatment her hysterical condition improved; the incontinence ceased, and with its cessation her life became more enjoyable, and her general condition improved. The choreic motions continued at the time of the last report, but were less than at the beginning of treatment.

In regard to (12) she is having about as many attacks as she had under bromides, but far less than when she had no treatment whatever.

In regard to (4) the chorea is only somewhat less than at the outset.

It will be noticed that three of the five cases reported as improved were presented to the Commission by Dr. Stevens, being his private patients, and that no exact data have been obtained regarding them. This is especially to

be regretted as the exact degree of improvement cannot be ascertained.

In regard to (6) also a patient of Dr. Stevens, no data have been furnished as to the result.

It will be seen that eight of these patients are unimproved. These are :

CASE 2,	-	Flora K.,	-	Epilepsy,	-	Dr. Starr.
" 4,	-	George K.,	-	Chorea,	-	Dr. Seguin. ⁹
" 5,	-	Aggie H.,	-	Epilepsy,	-	Dr. Dana.
" 7,	-	E. F.,	-	Chorea,	-	Dr. Stevens.
" 9,	-	David S.,	-	Epilepsy,	-	Dr. Starr.
" 10,	-	Eva. S.,	-	Chorea,	-	Dr. Starr.
" 13,	-	Mary McK.,	-	Epilepsy,	-	Dr. Dana.
" 14,	-	Agnes H.,	-	Epilepsy,	-	Dr. Birdsall.

The patients with chorea (4,¹³ 7, 10) remain about in the condition in which they were when sent to Dr. Stevens. They have been at times slightly better and at times much worse than they are at present. The treatment has had apparently no influence on the course of the disease.

The patients with epilepsy have continued to have attacks. In all of these cases the immediate effect of withdrawing bromides was to cause an increase in the number and in some cases in the severity of the attacks. This rarely continued longer than three months. Then a fairly regular recurrence of attacks is noted. In some cases twice or three times as frequent as under bromide treatment.

The investigation therefore demonstrates incidentally the value of bromide as contrasted with non-medicinal treatment.

Nor can any special connection be traced in these cases between the occurrence of attacks, and changes in the ocular conditions produced by operation or by change of glasses. There has been no apparent result in these cases except that the cessation of bromide treatment has allowed the disease to take its course.

¹³ Added to corrected list of improved.—ED.

It may be mentioned, however, that many of these patients say that they are better in spite of written records proving the increased frequency of attacks. This is not wholly due to an increase of hope and confidence in the success of the treatment, but is to be ascribed in part to the freedom from the depression of mind and of bodily functions produced formerly by the use of bromides.

Other of these patients have complained much of headache and vertigo, which have appeared during the treatment (*and in several a condition of diplopia has been produced and now remains*).

And a few of these patients have been made exceedingly miserable by the great increase in frequency and severity in the attacks, which has finally necessitated an abandonment of the ocular treatment and a return to drugs. This statement applies to a number of the cases, withdrawn and not counted in the list.

In view of these facts, your Committee cannot but express the opinion that, so far as this investigation has warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to patients suffering from chorea and epilepsy to warrant its adoption or recommendation to the members of the Neurological Society, as a means of cure, or as the sole therapeutic measure. It will be noticed that none of the cases have been cured—all remain indefinitely under treatment; a perfect permanent ocular equilibrium not having been secured in any case. If it is impossible to secure such equilibrium, a cure is not to be expected, granting the theory of Dr. Stevens. If it is possible to secure such equilibrium, it is to be supposed that it can be secured within at least a year (*two years*). Yet four of these cases have been under constant treatment for two and one-half years without this result.

There is, however, a third possibility which the Commission desires to present to the Society. And this is, that the insufficiency of the muscles may be merely one of the conditions in a class of diseases, in which the muscles are deeply involved, and one of which class epilepsy and chorea are examples, and that the tone of the ocular muscles may

vary with that of the other muscles of the body in accordance with the general condition of the patient or of the special strain, such as may occur in a spasm. It is also possible that the tonicity of the ocular muscles is impaired by the long-continued use of the bromides.

It may be admitted, that great insufficiency of ocular muscles, like myopia or hypermetropia, should be corrected.

If this possibility be approved, it becomes evident that treatment directed to an effect of the malady and wholly without relation to its cause, will necessarily be unsatisfactory.

And this hypothesis will also explain the very unfavorable results in the patients submitted to treatment.

ERRATA.

Page 21, line 11 from bottom, for "on May 9th, on June 12th, on July 22d attacks" read *in May, 9; in June, 12; in July, 22 attacks.*

Page 22, line 1, for "on Jan. 9; Feb. 6; &c., attacks," read *in Jan., 9; Feb., 6; &c., attacks.*

Page 29, line 9, *Two slightly improved* refers to the improved, and not to the unimproved cases.

Page 11, foot note 11, insert the word *all* before the words "*drop out.*"

M. ALLEN STARR,

Secretary of the Commission.

REPLY OF DR. STEVENS
TO THE
REPORT OF THE COMMISSION TO EXAMINE
THE PROPOSITION THAT FUNCTIONAL NER-
VOUS DISEASES ARE LARGELY DEPEND-
ENT ON OCULAR DEFECTS.

To the Neurological Society :

Contrary to the agreement and stipulations between the Commission appointed by this Society and myself, the Commission has resolved to submit its report at this time. The importance of the subject of the inquiry which it undertook is sufficiently great to have warranted not only a fair, but even a generous interpretation of the conditions agreed upon for making this report.

The Commission, in making its report at present, not only violates the letter of our engagements, but apparently disregards what should have been the aim of the inquiry—a united effort to discover the truth. It violates also both letter and spirit of the engagements in that, whereas this investigation was instituted and carried on not to establish a part, but the whole of a doctrine, the Commission, in disregard of its pledges and of the plain meaning of the agreement, advertises and presents a report upon two forms of disease ; thus leaving the subject of investigation as unsettled as before—a contingency against which I entered my earnest protest before entering upon the work of the investigation, and against which I accepted the formal pledge of the Commission. The challenge sent to me in the name of this Society was a challenge to investigate a proposition, and these two forms of disease were accepted on the pledge that the result should represent that doctrine.

Protesting against this whole action, which is contrary to the interest of medical science, as well as a personal in-

justice, it is my purpose only at this time to call the attention of those interested in the inquiry to the spirit in which it has been prosecuted by the leaders of the Commission and the errors with which the report abounds.

In order to obtain a just conception of all the conditions which have surrounded this inquiry, we must go back to the period at which it originated. It does not reflect unfavorably upon the sincerity or candor of any member of the Commission when the fact is recalled, which was at that time notorious, that a number of the members of this Commission had committed themselves against the views included in the proposition presented to this Society in my paper of March 1st, 1887, long before the paper was read, and in several instances by public denunciations. It is also a notorious fact that the opposition to these views had, to a considerable extent, among the members of the profession, taken the form of personal antagonism to the advocate of that proposition.

When, therefore, this Society, through its representative, requested me to enter upon this investigation, it virtually invited me to enter a hostile camp and to trust to the fairness of those who were known to be opponents.

Whether a consent to enter upon a trial of great importance to the truth which I advocated, as well as my own interests, was, under such forbidding circumstances, wise or prudent, is a question upon which it is not now necessary to enter. The facts, however, may throw some light upon the subsequent position of the two parties engaged in the investigation.

It is proper in this connection to express my sincere appreciation of the uniform courtesy and kindness of the two oculists associated with the Commission during the whole period through which the investigation has continued, and to say that with some other members of the Commission my relations have been only of a pleasant character. Whatever their position may be in respect to the endorsement of the report presented, I entertain for them only sentiments of friendly respect.

Responding to the formal challenge of the President of

the Society, I offered a plan upon which I believed that an inquiry could be made of interest and value to the medical profession and which appeared entirely just to all engaged. This plan the President in a letter declared to be "perfectly just and fair", and added his assurance that all were anxious to be entirely just to me. No sooner, however, had my acceptance to the proposition been received than the Commission, which had already been appointed, demanded radical changes, and several weeks were spent in urging and making alterations of this plan which should give the greatest possible latitude to the Commission with the severest restrictions upon the one who was to perform the labor and accept the responsibility. The vexations and annoyances of those weeks of preliminary work would have deterred anyone not possessed of the highest conviction of the truth and dignity of his cause from further relations with the Commission.

The work of the investigation, however, at length commenced, and it was seen that the Commission which had taken so many weeks to reconstruct the plan in such a manner as to be more binding upon me, was paying slight heed to the obligations of that plan themselves. It became further evident that it was the purpose of the Commission to send for treatment not only the most incorrigible cases, but apparently to keep the cases down to the lowest possible number. It is this last seeming purpose which has, through a long period, proved a source of vexatious controversies. For notwithstanding the fact that after a year had elapsed and only nine cases had been sent by the Commission, including two that were wholly unfit, and one that had never made but a single visit to my office, the Commission had already made repeated demands that a report be rendered.

Thus, while the provisions of the agreement required that the report should be based upon a number of suitable cases, not less than twelve nor more than twenty, the Commission was demanding that the report should be made upon five cases sent by them and one furnished by myself. But even of these six not all had continued under treatment ; in

fact, only four cases sent by the Commission were under treatment when one of these demands was made.

Even as early as April, 1888, the Chairman of the Commission in again urging a report, declared that it was impossible for the Commission to obtain cases and that therefore as the inquiry had continued for a considerable time, a report was due to the Society. To this my reply was that the Commission had issued the challenge for this inquiry, and that it should be easier for a large Commission to furnish twelve suitable cases than for one man to cure them.

Again, in this report the Commission returns to the familiar and disheartening complaint that an appeal made by it in April, 1888, by postal cards sent to all the members of the Society to aid them in the work of obtaining the necessary cases, "proved almost useless."

Again and again has this question arisen, in every instance in violation of the letter and spirit of the agreement.

When, in April last this ever recurring subject presented itself, upon my instance that the Commission must first comply with the rules of the agreement, one of the members of the Commission visited me and inquired what would be satisfactory to me, to, to which I replied that a literal compliance with the engagements would satisfy me. He then inquired if I would consent to a report in November in case the Commission would, within a month, send four new and suitable cases for the inquiry. To this I replied that if these patients continued under treatment, I would do so. He objected that this might cause indefinite delay. I at length agreed that should four suitable cases be sent, and should these continue until they could be considered fairly under my treatment, I would be responsible for retaining them and would not interpose objections if some of them should discontinue. I did not, as the Commission reports, "request" four patients. I accepted the proposition offered, on certain conditions. Nor have I ever directly or indirectly, as represented by the Commission, "requested" four or any number of cases. Nor have I, as stated by it, "com-

plained" because many cases were not sent to me. I have declined to comply with its demand to surrender the terms of the agreement, and I submit it to the judgment of this Society and the public whether it is either dignified or just for this Commission to represent that I have been a seeker for favors at its hands. The member of the Commission already mentioned a few days after this interview reported, as the Commission's representative, that there would be sent four suitable cases within the next four weeks, and that on the basis of this agreement a report was to be made in November. Written statements of officers of the Commission confirmed this oral agreement. Three cases came and were accepted. Another came, but as she not been informed that she was to discontinue all drugs, she declined to attend. Of this the Commission was at once notified, and at the end of the month two notices were sent, stating that only three cases had been received. To these letters there was no response. Autumn came and as usual there was a demand for a report. To my objection that the Commission had failed to do as it had agreed, it was said that inasmuch as more than one of the cases sent had remained, the agreement was virtually complied with. This was certainly not a correct claim. It was my privilege to demand a compliance with a specific stipulation which had been made to me, as I had reason to suppose, in good faith, without giving any reasons for such a demand. There were good reasons, and some of these were submitted to the Commission.

The Commission declares that a letter from me at this time contains two distinct propositions. "One states that he (Dr. Stevens) would like four more acceptable cases; the other that one or more of the four patients continue under treatment till November." Permit me to say in the most emphatic manner that no such letter has been written by me, and that the Commission has no such letter in its possession, and this is not an exceptional instance of the practice of the Commission in this report of making quotations purporting to be from letters from me, but which letters never existed.

The Commission complains at great length that reports were not sent to it. No notes, except such as were sent, were required by the terms of the agreement, and we may properly inquire why so great impatience was experienced by the Commission, because all my notes of the cases were not placed at its disposal. The Commission itself explains the reason for that anxiety when it says in the report just read: "During the Autumn of 1888, as numerous cases had been under treatment by Dr. Stevens for many months, it was discussed at several meetings when a final report should be made. Preliminary to the planning of a report it was necessary to collect all the data relative to the cases." . . . "This was made difficult by the refusal of Dr. Stevens to furnish his notes of the cases."

The reason, then, why the Commission did not render the final report a year ago, appears not to have been respect for the agreement into which it had entered, but the difficulty of obtaining the materials for making the report before it had furnished the materials for doing the work.

It will help to a clear understanding of the character of the notes required and of the impropriety of the demand, if we examine a letter of this period when the Commission had again determined to make its final report. This letter, dated October 7th, 1888, reads as follows:

"I am directed by the 'Stevens Commission' of the Neurological Society to request you to send me copies of your records of the cases submitted to you by the Commission in accordance with Section 5 of the plan of proceedings. The Commission desires to make a report in December, if possible; but it is essential that your report of the condition found, of the operations done, and the subsequent condition and of the present state of each case, should be in their hands before such report can be prepared. Will you kindly state which of the following patients have been treated and which of them are still under treatment?"

(Here follows a list of names.)

Yours very truly,

(Signed) M. ALLEN STARR, *Secretary.*"

From the above it appears:

First, that the Commission had resolved to report the results of the investigation; and second, that it demanded from me a complete report of all the original conditions, the treatment, progress and present conditions of all the patients. In other words, it demanded a complete and final report.

Section 5 of the plan, in accordance with which this report was said to be demanded, distinctly refers to the final report, and if there could be a doubt as to the meaning of this section it should be interpreted by the corresponding provision in the plan originally submitted by me, in which provisions for the final report of the Commission and of myself are contained in the same section, and the meaning is explicit. There is nowhere in the articles of agreement any provision for the kind of report called for in the above letter, except that which is to be made at the close of the investigation. This Section 5 of the revised plan reads: "A report shall be made by Dr. Stevens to the Commission of the conditions found, of the methods and details of treatment, and the progress of the case and the conditions remaining at the times of making the report."

Will any right-minded man claim that this section calls for a report such as is demanded in the above letter, to be made by me at any time at the will of the Commission? Or will any reasonable person withhold his approval of my refusal to furnish such a report when the demand for it was coupled with the announcement of the Commission that it was to use this material in a flagrant violation of its own obligations to the public and to me?

This Commission, representing a large society, had publicly challenged me to an investigation, to be based upon not less than twelve nor more than twenty cases. Now, after a notable failure on its part, shown by the fact that after the first nineteen months of its existence, this Commission, which had so boldly challenged me, had sent to my office, including those who came but once, the syphilitic and traumatic, the intoxicated, the cases of gross cerebral lesions, and others which were not in the inquiry, according to the plan—in all fifteen persons, of whom only seven were

then under my charge. The Commission was perfectly informed of this state of facts, and the repeated announcements of its purpose to report were in absolute defiance of the provisions of its own plan.

I freely confess that the annoyances of this ever-recurring conflict over a subject concerning which there could be no reasonable question of the right, have been to me a source of greater trouble than the treatment of these unfortunate cases during all this time.

In the lengthy presentation of its case in respect to the difficulties claimed to have been encountered by the Commission in obtaining records, a great deal of matter is included which does not accord with the evidence in my possession. The report asserts that "Dr. Stevens has not furnished the Commission with reports of the case, or copies of his various notes of them (or allowed of copies being made at the Commission's expense, as was proposed."

How this assertion harmonizes with the facts may be seen from the following statement :

May 22d, 1887, the Secretary of the Commission, wrote, asking if Dr. Stevens would "allow such a copyist as Dr. Foster may select to copy the histories already in your possession," etc. To this an affirmative reply was sent. As Dr. Foster did not send the copyists, my own clerk prepared the copies of all cases then under treatment, and sent these copies to the Secretary, without expense to the Committee. The Secretary acknowledged them in the following letter :

24 West 48th Street, Oct. 8th, 1887.

Dr. GEO. T. STEVENS.

Dear Doctor:—The report of the six cases are received. Will you kindly let me know what the expense of copying has been, and I will refund you. Will you also kindly inform me how many cases have dropped off and do not continue to come and to whom those cases belong, so that the doctors can look them up and send them back?

Yours very truly,

M. A. STARR.

It will thus be seen that the assertion of the Commission in its report that I refused to allow copies to be made is incorrect. The statement also that Dr. Stevens has put the Commission to serious inconvenience by retaining the only existing notes of one case can be positively disproved by the written testimony of the Chairman of the Commission.

I have prolonged this portion of my statement to this very considerable extent, because the Commission has expended great pains and much space to make it appear that in refusing to comply with its demands I was violating the spirit and letter of the compact. I reply that I resisted the declared intent of the Commission to disregard the plan which it had offered, and I think there are many who will approve of that resistance.

The Commission also complains that Dr. Stevens declined to make new stipulations respecting the time during which patients should continue under treatment. To this and similar propositions I uniformly replied that it would be better to comply with the present agreement than to make new ones.

In all this matter, then, in which the Commission labors through many pages to produce the impression that Dr. Stevens was an obstacle to the work of the Commission, it appears that Dr. Stevens simply declined to consent to a violation of the original contract or to resort to a new one to suit the purposes of the Commission.

Before passing to a review of the statements of the Commission relating directly to the conditions of the patients before and after treatment, it is desirable to look further into the general spirit and motive of this report.

One of the sections of the plan submitted by me to the President of this Society in March, 1887, reads as follows :

“8th. Should any patient decline or neglect treatment without consent either of a majority of the Commission or of myself, such case should not be regarded as in the inquiry.”

In the plan, as revised by the Commission, a part of section 5 reads as follows :

“ If any patient declines or neglects treatment, such case shall not be regarded as included in the inquiry, or counted.”

These two forms of statement are clearly intended to mean that the report of the inquiry is to be confined to those cases only which come within the proper meaning and scope of the inquiry. Why, then, does this report contain long details of thirteen cases, which, according to the stipulation, were “ not to be regarded as included in the inquiry or counted ”? Can it be that, by presenting this long array, representing some cases which came once only, and others which should never have been sent at all, the Commission desires to convey the impression that there has been a much larger amount of good material furnished than has been used to good purpose? Surely no scientific purpose can be served by this array of imperfectly reported cases. If the motive is not to place Dr. Stevens in a false light, the plan has been unfortunately conceived. These thirteen pages of type-written material, inserted in this report in direct defiance of the articles of agreement, must surely have a deeper significance than the mere setting forth that a Commission of this Society has been able to find a certain number of epileptics and choreics, some of which had come to me but a single time, of which most were unfit and all were out of the inquiry. Whatever the purpose of inserting these cases in the report may be, the evident effect is to cast a reflection of failure upon Dr. Stevens. It is also in disregard of a specific promise of one of the Commission that, if I would send him copies of cases not in the inquiry, they should not in any way be included in this report. The copies were sent, and the cases are in.

But there are details in these and other cases which are, if the Commission is not aiming to induce prejudice in the minds of the reader, certainly unfortunate. For instance, John D., Case 22, was a case of old syphilis with optic-nerve atrophy and with a fresh wound measuring several inches

in length, extending through the thickness of the scalp, an injury inflicted by a flat-iron in the hands of his wife. These facts were stated in a letter to the Secretary declining to accept the case. He is in this report stated to have been rejected on account of his "social relations."

Mrs. Q, Case 26, was a respectably dressed and well-behaved German woman, who was no more objectionable, from the standpoint of her appearance, than others sent by the Commission. She was a case in which optic-nerve atrophy was only one of many indications that the patient was suffering from extensive organic degenerations. For these reasons solely, Dr. Webster, and afterward Dr. Dana, fully concurred with me in the view that she was an unsuitable case. The report says: "She was withdrawn because of his objection to the patient, who was unpresentable and had several attacks in his office." The patient was neither unpresentable, nor did she have several attacks in my office.

What motive has induced the Commission to apply reasons, which were not the real ones, for the withdrawal of these patients? Was it to convey the impression that they were rejected for slight causes? Surely it could not be supposed that an honorable Commission would mislead for the purpose of concealing the fact that they had sent such unsuitable cases and so many of them? Nor could the thought be entertained that an honorable Commission could deliberately send cases known to be incurable organic cases, for the purpose of entrapping Dr. Stevens into their acceptance. In this connection the Commission has unfortunately placed upon record a statement which is to be regretted. In the report of the case of Stephen W., the Commission states: "The epilepsy was thought [by the Commission] to have an organic basis in a cicatrix in the left hemisphere; but, in spite of this statement, Dr. Stevens accepted the case."

The circumstances of the acceptance of this case were as follows:

* The patient made his first call late in the day, and without any examination he was told to call at an appointed

time. The Commission was notified and both Dr. Webster and Dr. Moore were present for the examination. A large number of private patients were at the time demanding my attention. I requested Drs. Webster and Moore to make the ocular examination, which they kindly did. I did not go into the room where the ophthalmoscope was used, nor did I at that time even read the notes of the case that were brought by the patient. I assumed that the Commission would send none but suitable cases, and I doubt not that the gentlemen who examined the eyes and reported nothing noteworthy, made the examination in a much less careful manner than they would have done had they been expecting to find disease. Of course neither of us exercised sufficient care and on my part the neglect was an important one.

The case was accepted, and several days passed before I found time to make a critical examination. Soon after this I took the opportunity to express my belief to Dr. Dana that the case was an entirely unsuitable one, and it was withdrawn. I did not at that time suppose that it was the deliberate purpose of the members of the Commission to send a case which they had had under observation and which was known to be incurable.

The plan provided that typical cases only should be chosen, which were not complicated with any known organic disease and which had resisted approved methods of treatment. I assumed at that time that any case referred to me by the Commission I could accept in good faith. Experience, however, in this and other cases which were accepted at the beginning, led me at a later period to make careful scrutiny, with the result that quite a number of the cases sent were rejected as unsuitable. And this state of facts may throw light upon the reason for my insistence upon a full compliance with the agreement of April last, that the whole number promised should be sent, for of the early cases sent nearly every one should have been rejected, and four suitable cases would, at a later stage of the work, have been an important factor.

There is a familiar proverb that "Straws show which

way the wind blows." In ascertaining the spirit in which the report is made, it may be worth while to recall to mind the fact that in the history of one of the cases the report concludes: "In a letter of Dr. Stevens, dated November 7th, 1888, he (the patient) is alluded to as the "chronic boy."

The latent humor contained in the above sentence only becomes gradually manifest when we remember that a good deal of attention has been devoted to the person who is represented as characterizing his choreic subject as "the chronic boy." Dr. Stevens freely admits that his penmanship is not such as would obtain for him a position as writing master, but there is not this poor excuse for this attempt to subject to ridicule the man whom this Society has invited to all this labor and responsibility. The quotation which can have but one significance is not found in any letter written by me. I need not adduce further examples of the spirit which pervades this report, but I may call the attention of every one who has listened to the reading to the fact that whatever may have been the purpose or motive of the author of that paper, from its first page to its concluding clause, there is no word or sentiment which would lead the hearer to suppose that the person whose work has been so long under review is worthy of any confidence or of ordinary respect. What the clear tenor and effect of such a report is, I leave for the judgment of honorable men to decide.

Passing now to the reports of cases which have been under treatment, we are at once struck with the fact that so many of the cases which had from five to twenty years resisted the effects of toxic doses of arsenic and bromide were of such a simple and easy character. Again, it is worthy of note, that where two neurotic manifestations existed in the same patient, the disappearance of the one not specifically mentioned in the plan is made to account for the improvement in the other. Still further, cases which the Commission say have not been seen by the members for some time and concerning which cases they say that no conclusions can be arrived at, are reported among the "unimproved,"

while one of the cases which has been seen by the representative of the Commission, who has from time to time recorded the most favorable observations, is included in the class "unknown," the report stating that this is from a want of recollection.

It is my purpose here not to take up in detail every one of those reports, but to point out certain great defects in a few of them, which will throw some light upon the spirit in which all have been written.

Let us examine some of these cases.

First. The case of Elizabeth C. The Commission concedes that this patient is better, but not well, and that the first improvement appeared thirty weeks after beginning treatment.

The report fails, however, to set forth the heroic treatment to which this feeble little girl had been subjected during the two years prior to being sent to me. It does not state that she was, by the direction of the chairman of the Commission, kept month after month closely confined to her bed, nor that, according to the notes sent by him to me, she had taken under his direction twenty-five drops of Fowler's solution of arsenic, three times a day. It neglects to state that after these and many other heroic methods, the child was far more feeble when she came to me than she had ever been before, and that she was anæmic and destitute of every appearance of vigor or elasticity. It fails to set forth the facts that appear in the notes sent to me that her one or two attempts to attend school during the two years and more had proved absolute failures.

What are the facts concerning her improvement? During the school year commencing in September, 1888, and ending in July, 1889, the child attended school without the loss of a day, except when she was called out for Dr. Seguin's examinations, and during the present year she has renewed her school work with vigor and with no loss of time, except from the cause above mentioned. Her father, a professional nurse, and her mother a very intelligent woman, observed a marked improvement in her condition long before she was sent to school, and they are both confident that she was

able to have attended school much sooner than she did, but that their former experience led them to hesitate for a time, and then they concluded to wait for the beginning of another school year. The statement that the first improvement was thirty weeks after treatment commenced, is not in accordance with the facts as understood by the parents of the child, or as appeared from my own notes.

The report adds, "At present she has diplopia for near and far distance—an ocular defect acquired during treatment."

On reading this statement in the report I was surprised, for I had suspected nothing of the kind. On examining the child I found no evidence of diplopia; but I learned from her that what she called double images under the examination by the Commission, was the aberration which is perfectly familiar to oculists as the result of astigmatism. The child has three-fourths dioptre astigmatism in the left eye. Without a correction of this defect the over-conscientious child, when assured that what looked to her, as she expressed it, "Kind of double," really meant double, admitted that she saw double. In my examination, as soon as a three-fourths dioptre cylinder was placed properly before the eye, the aberration was corrected and the supposed diplopia promptly disappeared. I have so great confidence in the integrity and candor and the friendly sentiments of the oculists connected with the Commission, that I believe that if either of them is responsible for this statement, which is certainly an injurious one to me, he will improve the first opportunity to correct the important error. The child not only has no diplopia, but she has a condition of orthophoria with absolutely free and perfect rotation of the eyes in every direction, with abduction of 8° and adduction of 40° .

It is proper here to add that the Secretary of the Commission was kind enough to say that I could obtain the report of the oculists if I asked for it. As I have not yet sent a request, I have not seen it.

Second.—Flora K., Case 2. The report states that this case was under observation of the Commission four years previous to being referred to me, during which she averaged five attacks a year of grand mal.

The report fails to state that the patient had also great numbers of slight attacks in addition to the above, and that the patient had been an epileptic with severe and frequent fits since her first year (being at this time twenty years old). Nor does the report include the fact that at the beginning of the observation of this case optic nerve atrophy, with pathologically enfeebled action of all the muscles within the orbit, including drooping of lids, not amounting to complete ptosis, had been observed; nor that attention had been repeatedly called to this condition. The report does, however, say that positive harm has been done by the ocular treatment, and proves it by setting against the five monthly attacks of grand mal and the unreported number of petit mal, the number of attacks of slight vertigo which, to use the words of the patient's mother, "Can hardly be noticed," and which from the time she first came to me she had been instructed to record at the moment on a calendar, which she is ordered to carry in her pocket for the purpose—a practice adopted only after she came to me.

The patient believes that she is greatly improved. The mother is sure that she is, and says that she can now trust the girl to go about alone, which she could not do before. She has almost completely recovered from some most distressing nervous symptoms which have from the beginning accompanied her disease. Her general health has greatly improved, and she is greatly better in her mental condition.

The patient has not recovered and does not belong to the class of functional cases. She long ago passed out of that class. She is certainly better, notwithstanding the remarkable statistics of the Commission.

Third.—George K., case 4. This was one of extravagant electric chorea with coprolalia. His clonic convulsive movements, his loud whoops and barkings, and his constant repetitions of obscene phrases under all circumstances are to his friends among their most painful memories, and to many physicians among their most curious observations. He has been widely known as the "barking boy." A month after ocular treatment commenced, a very remarkable change for the better was observed by all who saw

him. The mother says, "I thought he was well." Two months later a relapse occurred, but he did not return to his former condition; and both the boy and his mother positively assert that in his worst periods, since he has been under my charge, his condition has never been so bad as when at his best during some years before. The violent convulsive jerkings which were repeated every second or two have given way to slight movements often intermitting for a long time, and his loud barkings and whoopings have been replaced by a sound resembling a hiccough. Even these nervous manifestations are often absent altogether. He is not well, but notably better; indeed, judged by the ordinary standard of success in such cases, he is remarkably better. He is classified with the unimproved in the report.

Fourth.—Aggie H., case 5. This girl is said by the Commission to have had from two to four attacks of petit mal daily for four years.

The mother of the child has stated more than once in the presence of the members of Commission and others that her number of attacks very greatly exceeded this number, and that from forty to sixty would correctly represent them, that they occurred every few minutes, and that as no one could keep perpetual watch over the child her attacks could not be counted. Referring to her mutterings when in an attack, the mother says, "She was talking all the time." The mother now declares that the number of attacks is less than one-twentieth the former number, and that the character of them has been greatly modified for the better. Thus, notwithstanding the assertion of the report that "the result of ocular treatment pursued with regularity for fifteen months seems to be entirely negative," a really notable improvement has, in fact, taken place.

Fifth.—G. H., case 8. The Commission states the number of attacks of grand mal (which were attacks lasting several hours) at three in a year, another lighter form of epilepsy once in three or four weeks, and attacks of petit mal three or four daily. Thus it appears from the report of the Commission that the patient suffered from what, by the numerical method, which appears to be a favorite one of

the Commission, must have been many hundreds of attacks in the course of a year.

The Commission states in respect to the result: "Through lack of definite data no conclusion can be drawn from this case."

It is proper to inquire what data was and is in the hands of the Commission. It appears that of the four occasions when this patient has been brought to the city since he was referred to the Commission, he has been seen by one or more of the members on three. On each of these occasions written memoranda have been made. The following notes are in the handwriting of Dr. Birdsall:

NOTES MADE MAY 25, BY DR. BIRDSALL.

"Grandmother states that he has not had any convulsions, nor any of the attacks of vertigo (premonitory spells) since March 28th. Patient himself states, that about April 27th, he had, one day, the feeling that he was about to have an attack, resolved that he would think of something else; it did not come on, and none has occurred since. Tenotomy was first performed, April 6, 1888."

"March 30, 1889. Patient's general appearance is better than when last seen—looks as if he had increased in weight. Patient states from memory that he thinks he has not had any of the premonitory attacks, but he had one severe one this month."

This memorandum was made after a close examination of the patient, a very bright boy, and his father a man of learning and ability—an examination lasting more than half an hour. The claim of the report that nothing was learned regarding petit mal in all this long examination, and, therefore, that no conclusion can be formed, is remarkable. In fact, there were no such attacks. It will thus be seen that, according to the records made by one of the Commission, the patient had but a single attack in more than a year. Notwithstanding the fact that the Commission has a copy of these notes in its possession, the result of treatment is recorded as "unknown."

When we consider the professedly minute memory of the

Commission in certain respects, this lapse seems extraordinary.

Was this case relegated to the class "unknown"? because if it had been placed where it belongs it would have made the list of "improved," disproportionate to a number which would sustain the Commission's general conclusions?

Light may perhaps be thrown upon this question by a further interesting study of the methods of the Commission in presenting its professed summary of results, and which appears in the disposition which it has made of two cases, neither of which, according to the articles of agreement, should have been included in the report.

The Commission, for its own purposes, and contrary to the rules, established a time limit by which the case of David S. could be admitted to the list of those which the Commission calls "counted." Now, David was, as the Commission claims, under treatment four months; and stopping before his complex muscular errors were corrected, he did not get better. He is placed among those whom the Commission "counts" and in the list of "unimproved."

Patrick H. was another epileptic who dropped out, but Patrick was much longer under treatment than David. If the rule included David among the "counted," why not Patrick? There is this coincidence—Patrick, when submitted by the Commission, had an average of more than two-fits of *gros mal* every day—fits in which he fell in convulsions. A remarkable falling off of these attacks was observed during the first month of his treatment, for during that month he had only seven such attacks. The following month there were four; the next month one; then there was an increase to four during the fourth, and again a decline to two in the fifth month, and during the sixth month he did not have any. Patrick thought he was pretty well and discontinued attendance. Now, if the case of David, who did not during his four months get better, was to be used to swell the list of the "unimproved," by what logic was Patrick, who, during his six months of attendance, had shown remarkable improvement, placed in the list of "not

counted" and thus prevented from serving a similar purpose for the column of "improved" which the other had served in the opposing list?

Sixth. The last of these case reports to which I shall call attention is Case 13, Mary McK. This patient is a woman of excellent intelligence and who, notwithstanding her malady, which has kept her much of the time away from her duties, has been continued as a teacher in one of the Public schools. She was examined by members of the Commission in March, 1889, and in reply to their question gave an approximate estimate of the number of her convulsions. Before being sent to my office about the first of May last, she was handed a calendar on which she was instructed to record with greatest precision every convulsion and every dizzy spell of whatever degree of severity. Since she commenced treatment directed to ocular conditions, six months ago, she has greatly improved, although the bromides have been discontinued. She had, about the middle of August, an attack such as she had reported to the Commissioners as of frequent occurrence. She has had none since. She has in the meantime experienced some momentary sensations of vertigo, which have seized her while standing in front of her class, but have caused neither staggering nor falling—nothing more than a momentary sensation. These little attacks she at once records and these, which were not included in her statement to the Commission, are counted against attacks of convulsions in which the patient fell and was unconscious. It may be that this kind of numerical method of estimating the degree of epilepsy is a correct one. But in spite of the verdict of the Commission that she is unimproved, the patient and her friends think that there is a marked difference between falling in a fit from two to four times a month and having a dizzy spell as often. Especially do they think this since they assert that, in addition to the fits reported originally, the dizzy spells were even more frequent and severe than at present. This patient and the friend with whom she resides declare in the most positive manner, and in the presence of many gentlemen eminently competent to judge of the value of the statement,

that she is incomparably better. And the contrasts to which I have drawn attention, between the actual results and the results as set forth in this report in the cases which I have before cited, can and will be in every instance confirmed by these distinguished gentlemen.¹

It is unnecessary to pursue this subject further. It has been shown that the ordinary standards of judgment have been absolutely disregarded in these cases. It is easy to observe in the report of every case a sort of unilateral method of presenting the subject, suggestive of a kind of mental hemianopia, which certainly makes it appear greatly to my disadvantage.

The various facts which I have set forth may aid us in interpreting the comparative degree of success or failure of the work.

An inquiry which forces itself upon every mind is, what good was to be secured by prolonging this investigation through all this time by the failure of the Commission to send the stipulated cases. We have already seen that at the end of the first year, excluding three that were unfit, or did not come, the Commission had furnished, in all, but six cases. It must be admitted that this Commission either chose not to send cases, or it could not find them. If it could not, after a year of trial, furnish more than half the cases required by the agreement, should the Commission not have abandoned the trial or surrendered it to those who were possessed of larger opportunities?

Is it the judgment of this Society that the Commission had satisfied the conditions of the challenge for which the Society became responsible?

When the investigation was proposed, I assumed that all these cases would be forthcoming at once. I could not have supposed otherwise. The whole tenor of the agreement shows that that was the understanding. Is it to be believed that one would have consented to such an investigation had he supposed that five professed neurologists would require a year in which to select six cases of sufficient difficulty for the investigation?

¹ See letters from these gentlemen appended to this reply.

The Commission claims that it did its best. We are at liberty to inquire what was its understanding of the best methods of selecting its cases, and the following example will serve to illustrate what methods it actually adopted :

September 28, 1888, L. G. called with a letter from one of the Commission requesting me to examine her with reference to her acceptance as a Commission case. She was an epileptic, but to my great satisfaction free from any discoverable organic lesions. She was in good general health; had rosy cheeks, was not stupid from bromides, and was, for a Commission case, a decided novelty. One eye was myopic, the other astigmatic, and she had 8° vertical diplopia. In my satisfaction at getting a good case, I wrote, perhaps a little enthusiastically, that she was a good case and that she had vertical strabismus.

The case did not return, and I soon learned that one of the oculists of the Commission had operated for her strabismus. On calling the attention of the Commissioner who sent her, he replied : "Oh, yes, she was found to have vertical strabismus, so was sent to Dr. —, who has operated twice."²

Is there a member of the medical profession who would be unable to imagine that, with the above method of furnishing cases, a year might suffice to obtain some half-dozen which would present more than ordinary difficulties ? Whatever may have been the original condition of the majority of the cases sent to me during the first year, it is certain that they had at that time long ceased to be cases of functional disease.

It is not to be forgotten that all the cases upon which the Commission claims to base its conclusion, and which were sent by the Commission, had become worse under all forms of treatment. The testimony of the Commission is conclusive on this point. For example : David S., who had taken bromides indefinitely and in large quantities, stopped

² This statement was confirmed during the discussion by the member of the Commission who sent the case.

the medicine April 23d. The report states that "the result of stopping the bromides in April was the occurrence of nine severe fits between May 6th and 9th."

Again, John C., who had epilepsy twelve years and was saturated with bromides, had according to this report, thirty-one severe convulsions during the month succeeding the discontinuance of the drug. Dr. Seguin became so greatly alarmed lest the patient should die, that he restored him to the benefits of the bromide treatment which, if the patient yet lives, he is still probably pursuing.

The report states that "In all these cases (of epilepsy) the immediate effect of withdrawing the bromides was to cause an increase in the number, and in some cases, in the severity of the attacks. This rarely continued longer than three months." In other words, after three months of ocular treatment, improvement occurred, and this improvement has not only continued, but the patients who continued under observation, without exception, have made steady improvement.

Thus, while as a matter of fact every one of these unfortunate cases belonged to the class of incurables, by any of the ordinary methods of treatment, and as a matter of record—shown by the Commission—these patients had not only not improved, but had grown worse under such treatment, continued during many years by themselves or others, whose treatment they have approved, the cases properly included in this report, have in every instance under the present mode of treatment, materially improved in health and in respect to the special disease for which they were treated.

Indeed, in several instances very notable improvement has occurred. All this has been brought about without recourse to the deadening results of bromides or the toxic effects of enormous doses of arsenic.

In concluding this review of the report of the Commission, permit me to recall the salient facts in the case :

From the beginning the Commission entered upon its work in a manner entirely inconsistent with the true spirit of inquiry.

It pursued it in a manner calculated to induce vexation, misunderstanding and controversy.

It occupied many months in securing a few cases and has never yet complied with its own stipulations.

It has, through more than two years, occupied itself in selecting the most unfavorable cases for treatment, and has taken the favorable case to itself.

The spirit of the report is calculated to produce prejudice and tends to mislead.

The report makes professed quotations which are calculated to subject Dr. Stevens to condemnation or to ridicule, and the letters from which these professed quotations are said to have been made, never, in fact, had existence.

The report is now made in violation of every principle of right or fairness.

The report is represented as an investigation of two diseases and not of a principle, in direct violation of the pledges of the Commission.

The Commission has repeatedly sent cases well known to be unsuitable for the inquiry and has, contrary to the articles of agreement and contrary to the private promise of members, in this report paraded these cases in long detail, with the effect of misleading the judgment of those who are unacquainted with the facts.

It has reported the results of treatment of the cases by minimizing the importance of the malady at the beginning of treatment and by magnifying all the unfavorable conditions now existing.

The results represented are not in conformity with the actual facts, but are grossly at variance with them.

It has reported as resulting from treatment, unfavorable ocular and nervous conditions which do not exist, and has, in this respect, made statements which are grossly at variance with the facts.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Meetings of November 5th and December 3d, 1889.

DR. GEORGE W. JACOBY, President, in the chair.

The President called for the report of the Stevens Commission. Prior to the reading of the report, the following protest was presented by Dr. G. T. Stevens :

“ Mr. President and Gentlemen of the Neurological Society :

“ I respectfully protest against the reception of the report now announced, for the reasons—1st. That the Commission having failed to perform its part of the agreement upon which the report is to be founded, the report is not now in order. 2d. Because the report is not a report on the proposition at issue. 3d. Because the report is inconsistent with the facts, and is misleading. And 4th. Because it is an ex-parte report, and objectionable in spirit and motive.”

The report of the Commission was then called for by the President, and read by its chairman, Dr. E. C. Seguin (see page 657).

Dr. HAMMOND had seen eight of the cases described, in company with Drs. Weir, Webster, Ranney, and Amidon, the day before the meeting. The patients and their friends all admitted that the cases had been improved very much by Dr. Stevens' treatment, a fact which was at great variance with the statements made by the same patients to the Commission.

Dr. SEGUIN said that that part of Dr. Stevens' remarks which reflected upon the fairness and integrity of the Commission needed no reply, the names of the members of the Commission being a sufficient answer. Dr. Stevens' statements as to the evil effects of the arsenical treatment of chorea, and of the bromides in epilepsy, appeared to pander to popular prejudice, and were altogether unwarranted by facts. Some clinical experience and knowledge of practical therapeutics would have prevented such expressions. Arsenic was almost never harmful to choreic patients, and the evils of bromism could be prevented and corrected by watchful management and appropriate associated treatment.

It was true that the Commission had had the greatest difficulty in inducing patients to undergo the treatment, but their failure to obtain twelve cases within the first few weeks was not through neglect or violation of the agreement. It was simply an impossibility to supply the necessary material in a given time: enough had been furnished in all. Dr. Stevens, in not furnishing data as to the course and progress of the cases as stipulated in the agreement, had violated the compact. The report had no personal animus, and was not made up of the ideas of any one or two members. It expressed the

opinions of all of the members of the Commission, even of those selected by Dr. Stevens himself.

As regarded the statements of friends and relatives in medical investigations, these should be received with scientific doubt, particularly when they differed from the facts, as shown by the Commission.

As far as his own cases were concerned, one had been nearly killed by the ocular treatment involving the omission of bromides, passing into a status epilepticus, but improved again under bromides. Another had been under ocular treatment for fifty-two weeks before improvement became marked. Another, the girl with chorea, showed no tangible improvement until after the lapse of seven months. His own experience in cases of chronic chorea, even when of five to seven years' duration, was that they were not merely improved very soon under arsenical treatment with rest in bed, but, as a rule, cured in from two to three months. This girl, though improved under the ocular treatment, had now transient diplopia for far and near, while the second case alluded to saw double at the present time on looking to the right. The improvement in these cases (which were the best of the series) could not therefore be ascribed to the ocular treatment, but was to be attributed to improved health and time. Dr. Stevens had reported fifty per cent. of *cures* of epilepsy in his own (former) series of cases, but in the cases examined by the Commission there was not one. Moreover, he had reported his cures as taking place in a few weeks after beginning the ocular treatment, while in these cases where improvement of any kind had taken place, many months had been required before decided change had been manifested.

Dr. STARR, in regard to the remarks made by Mr. Hammond, referred to the records of the cases read to the Society, which demonstrated in each case an increase in the number of attacks, in some of them to three times as many as formerly. It was well known that the statements of epileptics were unreliable concerning their own seizures, and in several of these cases it was evident from their own records of their attacks that any statements that they had made that they were better were in direct opposition to the real facts. The recollections of such patients regarding their past states could not be considered as at all comparable with the actual observations taken during such periods.

In one case, pronounced by Dr. Webster as normal ophthalmologically, and in every respect a purely functional case, Dr. Stevens claimed to have found optic atrophy and called it an organic disease.

Dr. STEVENS said, referring to the lad, George K., who has been introduced here by the Commission and made to face this audience for an hour, this case was included not in the list of improved, but of the unimproved. On the blackboard had been written the number 5 as that of the improved. Since the lad by his quiet demeanor and eloquent silence had shown his true position, the Commission admitted his improvement for the first time. This is only one of

several concerning which such a change should have been made. This report includes two lines of statement. The first relates to the dealings of the Commission with himself; the second relates to the professed results of the work.

In respect to the second line of statements, it was difficult to place before the Society the real facts. He had therefore requested a number of gentlemen, distinguished for their fairness as well as for their great ability, to see several of the patients, who have been declared by this report unimproved by treatment. These gentlemen, after a careful examination, had arrived at conclusions widely different from those represented in the report.

If this line of statement could not well be presented, that relating to the dealings of the Commission could better be shown, and by the manner in which the Commission has treated this part of the report, the whole report should be judged. The length of time occupied in selecting cases indicated the kind to be eliminated and the kind which were to be sent. Dr. Stevens inquired whether the Society would indorse the professed quotations and the incorrect statements with which the report abounded, and which were without meaning or consequence, except as they might bring into discredit and ridicule the man invited by the Society to do this work.

Unquestionably many of the cases sent by the Commission and accepted in the beginning of the inquiry ought never to have been taken. Few of these early cases were at that time any longer functional.

The operative technique in many of these cases had proved exceedingly delicate and difficult, and had demanded a longer time in their management than ordinary cases. The greatest patience and skill had been required, and he did not profess to have attained the skill demanded for the quick correction of anomalies such as were here found.

He had not, as the Commission had stated, asked for favors or cases, and he had never written letters which are attributed to him by the Commission. Dr. Bird all had himself answered one of these statements when he said in this discussion, "Dr. Stevens did not ask for four cases. It was the proposition of the Commission."

Dr. BIRDSALL had seen an epileptic, one of the cases mentioned by Dr. Hammond as having reported improvement to him, and whose sister corroborated the patient's statement. He had asked the sister why she had made this statement. She had replied that she did not refer to the number of fits, which was unchanged, but meant that the patient seemed to be brighter without the bromides. The record, showed, however, that the number of attacks had increased and that the patient was in reality much worse under Dr. Stevens' treatment.

Dr. DANA said he had been appointed on the Commission by Dr. Stevens himself and felt that he represented him in a measure, but naturally his chief object had been to obtain the exact truths in the

matter. He had sent twelve cases of his own to Dr. Stevens, and had tried hard to get others to go; but he had seen no case much improved under Dr. Stevens' treatment. One case seemed to be improved, but he could not feel sure that improvement was due to the ocular treatment. He had lost most of his faith in it as a therapeutic measure. We ought, however, pay some tribute to Dr. Stevens for perfecting the technique in his procedures, even though he had pushed his theory to extravagant conclusions.

Dr. WEBSTER stated that the diplopia now existing in one of Dr. Seguin's cases did not amount to much. It was trivial. The patient had stated to him that it produced no annoyance. He had seen Dr. Stevens operate many times, and had learned very much from him as to the technique in the treatment of insufficiencies. Dr. Stevens had, moreover, greatly improved the nomenclature in this direction. Not being a neurologist, he did not feel competent to judge of the therapeutic effects of the operations in these cases.

Dr. L. C. GRAY had listened with interest to the report and its discussion, and was wholly unprejudiced on either side. He did not believe that Dr. Stevens had substantiated his serious charges against the Commission, or caused any particular improvement in the cases. Esquirol showed in 1828 that temporary improvement took place in all cases of chronic epilepsy in La Salpetriere when treated by drugs known at that day. A decrease of from six to three fits daily could not be considered a permanent improvement, because such decrease was often spontaneous, and in some cases fits spontaneously ceased for years. He agreed with Dr. Seguin that where improvement did not begin before fifty-two weeks after treatment had been begun, any improvement that might take place could not fairly be ascribed to the measure employed. If Dr. Stevens had claimed merely that headaches and other trivial neuroses had been relieved by his method, many of the gentlemen present would have coincided with him, but he had undertaken too much and was extreme in his claims. The same therapeutical principle underlay his system as that of Sayre, who cut prepuces, and that of the English surgeon who amputated clitorides for the cure of the slighter neuroses.

Dr. AMIDON said that he had been invited with a number of others by Dr. Ranney to see the cases described at Dr. Stevens' office, and they had the complete histories of the cases at the time upon which to form an opinion. He intended to oppose the acceptance of the report of the Commission, for it was clearly apparent that Dr. Stevens had brought about improvement in these patients without resort to medication, which was more than any of us could do.

Dr. SEGUIN said, with reference to the work done by Dr. Stevens, that all of the member of the Commission had appreciated it highly and had felt like adding something commendatory of his skill to the report, but refrained from so doing because, under the circumstances, it might have appeared hypocritical, and was really alien to the subject assigned to the Commission, viz., the determination of results.

Dr. J. L. CORNING thought that Dr. Dana's tribute to the good work done by Dr. Stevens was in exceedingly good taste. Dr. Stevens' work was unusually scientific and original, and there seemed to be very little of that sort of work done in New York, where compilation and the importation of foreign ideas were the order of the day. Hence this discovery of Dr. Stevens ought to meet with wide recognition.

A motion to adopt the report of the Commission was then carried by a vote of five to four out of the eighteen members present, the members of the Commission refraining from casting their votes.

The following motion made by Dr. Amidon was unanimously carried :

"That the thanks of the Society be extended to Dr. Stevens for the assiduous labor he has devoted to the work of the Commission, and that the Society assure Dr Stevens that it highly appreciates the ingenuity and technical skill he has shown in the prosecution of his method."

THE FULL HISTORIES OF THE FOURTEEN CASES UPON WHICH THE REPORT WAS BASED.

Each history is made up of the notes sent to the Secretary by the various members of the Commission on the various dates given at the head of each note. The summary was prepared by the member sending the case.

M. ALLEN STARR,

Secretary.

No. 1.—Elizabeth C., 13½ years old, chorea, Dr. Seguin.—First seen February 15, 1886. Parents healthy, free from neurosis. *Early history*—Normal. Child walked and talked at usual age. At nine years of age moderately severe attack of scarlatina, not followed by dropsy; never articular rheumatism. Did well at school until her thirteenth year when at Grammar School, in which she was put back one class. Patient worried very much over this, and studied at home. Always over-anxious about lessons. All this occurred in winter of 1884–5, preceding the *first attack of chorea*, which ran its course in May and June, 1885. The choreic movements were limited to the right side, but speech was unaffected and there was no paralysis. Under ten-drop doses of Fowler's solution the attack subsided. Was well all summer. *Second (present) attack*. Patient sent to school at opening of term (middle of September, 1885), and in two or three weeks the chorea reappeared in face and tongue first, then generalized. Tried school again occasionally afterward. On examination no symptom of organic disease of the nervous system exists. *Causes*. Masturbation was suspected and watched for carefully by the mother, who says she never detected it. There is no cardiac murmur. The apparent cause is cerebral strain by study and worry. *Treatment*. A thorough rest-treatment (in bed) with Fowler's solution to toxic effects, was tried in February and March, 1886, with only moderate improvement. The dose of twenty-five drops of Fowler's sol. three times a day was attained. Various tonics, the bromides, cold sponging, etc., were subsequently tried with only a moderating effect on

the chorea. Recently treated at the College of Physicians and Surgeons by Dr. H. W. Berg with Fowler's sol. of fifteen, eighteen, twenty drops three times a day. *Result.* Decided improvement. Patient cannot take more than eighteen drops without disturbance of stomach. *Mental condition.* Not hysterical and but slightly enfeebled. *Present condition.* April 17th, 1887. Mild generalized chorea. Speech slightly indistinct; rather childish; general health very good; no anæsthesia or paralysis; pupils normal; heart normal; patellar reflex high; no sign of menstruation; chest flat. Medicine stopped to-day. No conclusive evidence of masturbation, though there is some leucorrhœa.

(Signed), E. C. SEGUIN.
M. A. STARR.

April 17, 1887, is transferred to Dr. Stevens as a Commission patient.

NOTES OF THE CASE WHILE UNDER DR. STEVENS' TREATMENT.

The memoranda furnished by Dr. Stevens and by the oculists of the Commission are very scanty. I have seen the patient at intervals of two or three weeks during the two years, excepting the summer months while away from New York, and carefully noted her condition.

1887. Dr. Webster's note, April 22d. "Miss E. C. examined under atropine at our office, examination without atropine by Dr. Stevens the day before. Esophoria 4°, abduction 4°, adduction 9°, no hyperopia.

$$\begin{array}{rcccl} & 20 & 20 & & 1 \\ \text{R. v.} = \frac{\quad}{50} + & : & \frac{\quad}{20} & \text{w.} + & \frac{\quad}{42} \\ & & & & \\ & 20 & 20 & & 1 \\ \text{L. v.} = \frac{\quad}{50} + & : & \frac{\quad}{20} & \text{w.} + & \frac{\quad}{42} \end{array}$$

"Ophthalmoscopically normal."

May 10. Dr. Stevens writes Dr. Starr as follows: "A formula for glasses for Elizabeth C. has been given to-day, and her treatment may be considered as commenced. It is possible that it may be proper to make an operation for left hyperphoria on Friday next, at the time appointed for other operations. . . ."

May 18. (Dr. Seguin's note): "To-day has about as much chorea as when referred to Dr. Stevens. Mother states that she has at times been almost, but never perfectly free from chorea. The first menses appeared without pain on the 4th instant and continued seven days (patient will be fifteen years old in July). This event had no effect on choreic state; she simply looked a little pale."

June 1. "Chorea about the same as regards movements of the limbs. Mother reports that lingual and buccal choreic movements are worse than when medicinal treatment was stopped, two months ago; the speech is thicker, and in the performance of various voluntary acts the tongue is projected from the mouth, and smacking movements are frequent. Often drops objects. Menses was normal on twenty-eighth day, viz.: May 29. At close of conversation the chorea is undoubtedly worse than four weeks ago." [This was three weeks after glasses were ordered.]

June 15. "No change. Variable amount of chorea from day to day. Now does not jerk as much as when last seen. More chorea on left side."

June 25. By Dr. Stevens to Dr. Starr: "We will operate on Elizabeth C. (Dr. Seguin's patient) for hyperphoria. Monday, June 27th, at 1.30 P. M."

July 4. "No change in chorea. It appears that two or three operations were done last week: the first on June 27th. Father states that patient was quiet just before going to the operation, and *very* quiet after it. Was remarkably free from chorea for two or three days. Since then it has returned, and is now as at last note. General condition fair"

July 29. "Very slight chorea; jerks small and frequent, occurring in various muscular groups on both sides of the body. Tongue very jerky; facial muscles quiet. Has resumed glasses (spectacles) in last ten days, by order of Dr. Stevens' assistant (Dr. Boyer). Mother says she notices very little change in the disease."

Aug. 29. "Is to-day fully as choreic as at any time since beginning treatment. Variable degree of chorea on different days. Parents think that she is worse on the whole. Is pale and thin. Dr. Boyer suspended use of glasses seven days ago and ordered pil. ferri et quin." [It will be observed that nearly fifteen weeks after Dr. Stevens declared the treatment commenced the patient was worse on the whole, and that Dr. Boyer felt obliged to order a tonic, in violation of agreement.]

September 28. "Is undoubtedly better than at previous visit. Still has distinct choreic movements on both sides of the body, more on the left. Speech almost normal. Father states that this improvement began on the 23d inst., after beginning the use of last spectacles on 20th." [From other notes it appears that Dr. Stevens ordered two sets of glasses after his return in September].

October 4. Since last week (Wednesday and Thursday) renewed chorea of tongue, hands and legs. This aggravation continues. Patient is about as she was last summer. New glass over right eye on September 29th."

October 21. "Muscular twitchings in face, mouth, arms and shoulders very marked. Speech slightly affected. Tongue is often projected, and patient makes smacking or sucking noises. Mother states positively that as compared with patient's condition last spring, there is no material change." [This is twenty-one weeks after beginning of treatment. I urged the mother to submit the child to one more operation].

November 4. Note by Dr. Webster: "Miss C. having an exophoria of 2° + with an abduction of 11° , Dr. Stevens advanced the right internal rectus, which had been set back a little too far by its last tenotomy, and after the completion of the operation there was esophoria 2° , with an abducting power of 3° ."

November 21. Note by Dr. Stevens to Dr. Starr: "Dr. Stevens will operate on Eliz. C. (choreic patient of Dr. Seguin) for exophoria on Friday, November 25th, at 1.30 P. M."

December 9. Rather more chorea of hands; much more of tongue; while working or playing she "works" her tongue in her mouth constantly, and drools so that chin is sore toward evening. In reading articulates fairly well. Occasional jerks of legs. Another operation will probably be done to-day."

December 30. "Almost perfectly free from chorea. The least twitching

(the least possible twitching meant) occurs in fingers and about mouth. Speech normal. I have never seen her nearly so well. Father states that a week ago she was 'bad,' as bad as ever. Improvement began on the 24th and 25th; a rapid, but not a sudden improvement. Last menses on November 20th; none in December, and the aggravation of last week was at a time corresponding to menstrual period."

1888. January 11. "Menses last week: normal, with little pain; was not more nervous then. The great improvement noted at last visit continued three or four days. Since has had slight twitching in various parts: in face, neck and arms. In walking the left leg is lazy and weak. Has spectacles since December 9."

February 3. Remarkably free from chorea while sitting or simply standing. When talking, however, choreic movements appear slightly everywhere; most marked in right hand. Mother is still afraid to trust patient with dishes, etc., as she would drop them. Yesterday was not as quiet. Speech slow, but distinct. General condition good."

February 24. Memorandum by Dr. Webster: "Name, E. C. Physician, Dr. Seguin. Hy. R. 1°. Tenotomy of superior rectus. Alter no Hy. Exoph. (? written 'Eoph.') 1°. Abd. 5°."

February 27. "Still shows the same slight universal chorea as when last seen; most marked in right hand and about mouth. An operation was done on the 24th instant in presence of Dr. Birdsall. Menses normal, and patient is not more nervous then. General health good."

April 4. "Is almost perfectly free from choreic movements, strictly speaking. While standing, and more while walking, has partial flexion movements of fingers at metatarso-phalangeal articulations (approach to cone-hand), and at wrist. The thumb is pressed hard against the index. This is a tonic movement. Mother states that when patient's hand is upon her arm in walking, she feels the fingers contract and 'draw.' Had more choreic movements after last operation (February 24th.) No facial movements seen during this visit. Has one patched glass in spectacles (over left eye)."

April 30. "Left eye was kept covered for three weeks. In last two weeks the right eye has been covered (with an opaque glass) and is so still. Is rather anæmic, though general condition is fairly good. Comparatively little chorea; more of right hand. Variations from day to day, e. g., speech was affected on 27th, but to-day is easy. Pleasurable excitement develops chorea more than annoyance or grief.

May 28. "Still exhibits traces of chorea in speech, right hand and leg. Speech affected only occasionally under pleasurable excitement. Right extremities show a little *slow* chorea all the time. Tongue a little unsteady. The patch was removed about three weeks ago, and she has since used both glasses."

June 6. Memorandum of operation (by Dr. Moore?): "Eliz. C. Exophoria 2°. Abduction 6°. Took a stitch in left externus, leaving after exophoria a trace, abduction 9°."

June 20. Remarkably quiet in last few days. Some impediment in speech, and occasional jerks of hands and face. Another advancement is to be done by Dr. Stevens on 22d. Is wearing spectacles, with both glasses clear. General condition good."

October 8. "No operation since June. Has grown, and stands better. Glasses have been changed twice in summer. Has very little chorea, but it is still distinct in right upper extremity from shoulder to fingers, and in right leg (flexion movements at knee). No facial chorea visible, but patient says that her tongue still moves involuntarily in mouth. Speech low, a little hesitating, but very distinct. Father states that there was more choreic disturbance last week. She has at no time been free from it (chorea), though there is certainly a great improvement."

November 16. Almost no chorea. A little still shown in right hand and arm. While standing she holds her right hand (by her side) in a peculiar position: thumb in, and whole hand cone-like. Had more chorea a week ago. Glasses were again changed with apparent benefit. Menses regular and free. General good health.

December 3. "Drs. Stevens and Boyer discovered, a couple of weeks ago, that she had been using a wrong glass! Changed. She had four or five different pairs of spectacles. Left externus cut last week. Much more chorea in last three weeks; tongue a little unmanageable, right hand and arm and leg (little) quite active. More chorea than for a long time."

1889. January 23. "Hands about the same; speech remarkably good. On 19th inst. right externus was cut. No glasses since. Father states that, on the whole, there has been no change in three months: a little better or worse at times."

February 22. "Almost no chorea. A few twitches in both hands, and some pretty constant motion of right fingers. Speech very good. Improvement followed the last operation in two or three days"

March 22. Another operation was done about one month ago. A week later, the patient felt something slip or give way in the right eye, as if it were "strained." Two weeks ago, prism-glasses were ordered for reading only. Is without glasses now. At no time diplopia; while sitting is almost perfectly quiet; the small twitches occurring, now and then, in the fingers while standing; however, distinct choreic jerks occur in both hands and knees—more marked in right side; the patient and her father are both cognizant of this. Pulse and tongue normal; general condition good.

October 21. Presents no choreic movements. Speech good. Mother states that, occasionally during the last three months, has had slight thickness of speech and jerking of the hands, usually before the menses—which have been regular and easy. Patient looks well. Can read from one half to one hour without headache. Is troubled with diplopia in reading, not at a distance, but by placing red glass over one eye, heteronymous diplopia at twenty feet is demonstrated. With the qualification that there are occasional slight recurrences of chorea, this patient may be considered as cured. She has, however, in the course of treatment acquired an ocular defect, viz.: diplopia, both for near and far distance. Since May, an operation on the left rectus internus has been done, and two sets of glasses given. She wears her glasses only for work.

October 29. I find in Eliz. Cr.:

$$\begin{array}{rcl} \text{R. v.} & 20 & \\ & = \frac{\quad}{15} & : \text{Hm. 0.25 D.} \\ \text{L. v.} & 15 & \end{array}$$

Hyperphoria 0° , Exophoria, 1° , in accom. 4° ; sursunduction R $\frac{3}{4}^{\circ}$, L $\frac{3}{4}^{\circ}$, abduc. 5° , Adduc. 16° . Movements of eyes do not seem limited in any direction. No diplopia on testing with red glass. Ophthal normal. Patient says she has had thirteen operations; that when she looks up from reading, suddenly, she sometimes sees double, and that her eyes smart and burn, and run water when she reads. Her mother says she does not complain of it very often. There have been very few manifestations of chorea since last May.

(D. WEBSTER.)

October 30. Examination reveals the fact that diplopia is variable and occasional. No diplopia with red glass to-day.

(SEGUIN.)

Summary.—A careful perusal of this tedious journal reveals on the whole a great improvement—almost a cure. It will be noticed that the “treatment,” *i. e.*, the use of spectacles and the performance of several operations, was not quickly followed by improvement, as it appears that on October 21st, 1887, twenty-one weeks after the official “beginning of treatment,” the chorea was as it had been before the transfer of the patient to Dr. Stevens’ care. The patient’s mother was much discouraged, and in justice to the fairness of the trial I was obliged, rather against my better judgment, to *urge* that further operations, etc., be allowed. The first decided improvement appeared thirty weeks after beginning of treatment; and any specialist who has had cases of chronic chorea (even of from three to six years’ standing) under treatment will recognize this as an absurd limit of trial of any one treatment. From that time, December, 1887, very little improvement occurred up to April, 1889, At times the chorea was worse, at times almost free from chorea, but never, even two years after the “beginning of treatment,” was the patient free from chorea. Since April she has been nearly free from chorea, except at time of menses. She is not *cured*.

In this connection it is well to bear in mind that the medicinal treatment, which in a first stage extended only over a period of three months (February to May, 1886), apparently gave little result, yet was followed in the summer of 1886 by spontaneous improvement. The patient was (accidentally) brought to my clinic at the College of Physicians and Surgeons in November, 1886, and was there treated by Dr. Berg with full doses of arsenic. This second course of treatment was followed by “improvement.” Consequently it may be stated that during the summer and autumn of 1886, and during the winter of 1886–7, improvement was steadily taking place; and that when the child was sent to Dr. Stevens, in April, 1887, she was in the full tide of spontaneous improvement, which is well known to take place in almost all cases of simple chorea. Yet, at periods of three and of fifteen months after putting on glasses, the chorea was *worse*.

I should add that during the whole course of the first treatment (February to May, 1886) I always had very grave doubts as to the exactness and faithfulness with which my orders as to doses of Fowler’s solution and as to rest were carried out. The rest was, I am quite sure, not enforced.

On the whole, I would express it as my deliberate opinion that the ophthalmic treatment of this case has had very little, if anything, to do with the great improvement, which did not begin until thirty weeks after the first

glasses were ordered by Dr. Stevens, and which has not terminated in a cure at the expiration of nearly two and a half years. During these twenty-nine months the patient has submitted to about 13 operations, and has worn seven or eight modifications of glasses before her eyes: a most extraordinary exhibition of patience and faith on the parents' part, and of perseverance and undaunted courage on Dr. Stevens' part.

No. 2.—Miss Flora K., age $19\frac{1}{2}$, nat., U. S., date April 22, 1887. M. Allen Starr.

No epilepsy in the family.

No insanity in the family. Father was in first stages of locomotor ataxia when she was born, is now in third stage. Mother living and healthy. This child is only one who has been ill. Two children died. One born dead and one died at nine months of pneumonia. Patient was born naturally (fifth child). Was well until ten months old, when she had measles. At age of one year had first attack, lay unconscious with eyes open, motionless for twenty-four hours. No convulsions. Then had fever, and for two months had "brain fever." For three months after this was unable to speak or walk. After this the spasms began just as they are at present; they have continued ever since at intervals.

She has two forms of attacks, (1) slight, a sort of faint, during which she is unconscious, but moves her hands; she does not fall or cry out, or bite her tongue; these last a minute, when she gives a cough, and it is over. Sleeps sometimes after these attacks for awhile.

(2) Typical attacks of grand mal; cries out, falls, froths, bites tongue, has general convulsions, during which she passes water, and after it sleeps for several hours. Wakes with a headache which lasts for some hours. Rarely has an aura from the stomach usually none. The frequency of the attacks varies greatly. During the early years of her life they were at times frequent, one to five a day. At times only at intervals of three to six months. At puberty they increased in frequency, and for the past four years, during which she has been under my care, she has varied from one to ten attacks monthly; the average for thirty months being five a month. During the past three months has had fifteen attacks, of which two have been severe. She has been treated chiefly by bromides for four years, zinc, borax, belladonna, antifebrin and nitroglycerine having proved useless.

Present Condition.—No tenderness of scalp or back. Has occipital and frontal headaches occasionally, not menstrual. Reads Snellen types xxx with either eye at twenty feet. Eyes move perfectly in all directions. No deviation apparent. No paralysis of face or tongue. Dynamometer 85 R., 82 L. hand. No paræsthesia or anæsthesia. Tendon reflexes normal. No ataxia. Taste and hearing good. Has cough, loud barking, with occasional expectoration; it sounds like the cough of chr. bronchitis, but lungs are normal. No cardiac murmur. Liver and spleen normal size. No abdominal tenderness. No palpitation. Slight dyspepsia at times, not constant. Bowels regular. No need of laxatives. Urine normal; no alb.; no casts; no swelling of feet. Menses began at $13\frac{1}{2}$ years; has always been regular except for one year, about eighteen months ago, when they would go over from three to six days; never

ceased; she is unwell four days; flow is slight. She has pain before the flow; not severe. No vaginal examination made. No leucorrhœa.

For past four years since taking bromides her memory has been weak, and now it is poor. She has no hallucinations; is not stupid. She has a chronic eruption on her face, papular, not purulent. Has headaches in forehead occasionally. Occasionally dyspeptic symptoms, with acid rising and wind from the stomach and nausea, which has subsided when medicine was stopped. No constipation; has fits of coughing at night with discharge of mucus. Slight spinal tenderness in upper dorsal region. Slight ovarian tenderness on right side.

M. ALLEN STARR,

Confirmed by Dr. DANA.

April 22, 1887.—Abduc. 4. Adduc. 8. Orthophoria.

R. V. $\frac{20}{40}$ — : $\frac{20}{20}$ W. + $\frac{1}{48}$. Ophthalmoscopically normal.

L. V. $\frac{20}{40}$ — : $\frac{20}{20}$ W. + $\frac{1}{60}$. WEBSTER.

June 9.—Notice of operation for hyperphoria.

June 10.—Nineteen fits during past six weeks since first examination, April 22d. Operation performed to-day on sup. rect. of L. eye.

June 17.—No attacks for past week; has had headache for one week. Eruption and cough less.

June 25.—Attacks on 19th, 21st, and six on 2d.

Sept. 20.—Severe attacks have occurred of late only at night. Slight attacks, in which she does not fall, occur at all times of day, and are not followed by sleep. The girl and her mother say that the number of attacks is much less, but reference to the register refutes this statement. She has taken no medicine since May 10th. She says that formerly on stopping the bromide the fits were much more frequent; while at present the cessation of taking bromide has not resulted in an increase of the number of attacks. Has had headache all summer, and especially since her operation. Says they are more frequent and severe than ever before. Complexion is somewhat better, but she has a marked red papular eruption on forehead, both cheeks and nose. Her cough continues and is troublesome at night, when she raises mucus. She has worn glasses all summer, which have been changed from time to time. They produced headache at first.

Sept. 29.—Operation for esophoria. Abd. 5. Esoph. 1. Division of 1 inter., after which abd. 10°. Exoph. $\frac{2}{3}$ °.

Oct. 7.—Six attacks last week; two very severe. Headache severe for past week. Vomiting occurred for three days after last operation. No medicine was taken.

Oct. 22.—Severe attack on 9th; eight slight on two succeeding days. The record shows that her attacks occur in groups at intervals of two weeks, one set coming on three to five days after beginning of menses. In each set of attacks there are one or two severe, and several—three to nine—slight attacks. She has had no headaches for past two weeks. Cough is about the same. Eruption continues as before. Her face is brighter, and she looks more cheerful. She wears glasses all the time. For the past week the left glass has been made opaque by paper put over it, so that she uses only the right eye. She was operated on by Dr. Stevens about one month ago (Sept. 29th). The operation was not followed by any discoloration of the eye by blood.

Nov. 5.—Since last report eight attacks, one very severe with fall, and unconsciousness for two hours after it. The fall was so heavy that her sister who lives in the flat below heard it, and came up. Has had headache, which came on after glasses were changed. Was to have been operated on yesterday, but examination showed hyperphoria of only $\frac{1}{4}^{\circ}$, no esoph. or exoph., and no operation was done. Menses occurred on 29th, and lasted four days. The attacks preceded the menses. Has pain on left side of pelvis during period. Digestion is perfect. Papular eruption the same. Has coughed more lately than for some time.

Nov. 19.—Since last report thirteen attacks, one of which at night (on 13th) was very severe; her tongue was bitten and her head bruised, so that it pained her and is still tender. Her father counted six attacks on Sunday in addition to the severe one at night. Has had considerable headache, and after the fit on the 13th, vomited. Digestion good.

Nov. 21.—Orthoph. for distance, but eso. in accom. 7° . Abd. 4° . Has been wearing prism 3° , base out. Right int. cut, leaving abd. 9° . Exoph. 4° .

Dec. 12.—Attacks fewer. Has more cough. One severe attack. One attack was at night; did not eat before retiring. Had no headache of late.

Dec. 23.—On the 22d a stitch was put in l. int. rect. Cough is much worse. In a slight attack recently she was unconscious as long as it took the Elev. R. R. train to go from 65th to 42d Street

Jan. 14, 1888.—Little headache. Cough as before. Eruption slightly better under tar soap. Attacks on 2d.

Jan. 30.—No attacks since 2d. Has had nausea and vomiting several times lately without known cause. Cough somewhat better.

Feb. 10.—Operation for hyperphoria; stitch put in eye int.

Feb. 17.—Severe headache for some days. In recent fit fell and hurt her shoulder badly.

March 10.—Severe attacks, one very bad. Headache, occipital. Has worn glasses for past two weeks.

April 3.—For past three weeks has worn glasses with one (R.) eye completely covered, so that no light reaches the eye. For the past two months occasional hysterical tendency to cry and laugh, not noticed by her mother before. Has had much headache on top and back of head in past two weeks. Cough a little better. Nearly broke nose in attack.

April 25.—Dark glass over right eye removed on 19th. No glass till 23d, then new pair. Complains of occipital headache, drowsy, cough slight. Digestion good. Eruption about same as ever.

May 23.—Glasses changed on 16th and again to-day.

June 6.—Last six attacks occurred during the night.

Summary of Attacks in past Year.—June 1, 1887 to June 1, 1888: Monthly 25, 5, 13, 16, 17, 13, 16, 5, 22, 20, 18, 19. Total 179.

Compared with July 1, 1884–July 1, 1885: under bromide treatment. Monthly 7, 4, 11, 6, 6, 5, 4, 4, 10, 4, 9, 4. Total 74.

The eruption is not a bromide one, for it has not varied since the bromides were stopped. She coughs about as before, and has much more headache than she formerly had. The total effect of the year's treatment has therefore been in every respect most unfavorable. She looks somewhat brighter in the face.

June 6, 1888.—Operation for 2° l. hyperphoria. L. sup.rect. cut, leaving r. hyperphoria $\frac{1}{3}$. WEBSTER.

June 15.—Operation said by Dr. S. to be successful. She is now to wear “stronger” glasses. No headaches. Cough worse. Great shock on 10th (death in family). Two bad attacks on the 11th. At present vomits with the attack, and often has stomach aura.

July 3.—Much nausea for past three weeks; less headache; but headache has been so bad for past two months as to lead her to have her hair cut off.

September 10.—Thirty attacks since last note; two very severe. Suffers much from nausea and vomiting, and has epigastric aura. Has less headache than in the Spring. During the Summer Dr. Boyer has examined her eyes twice a week, but she has worn no glasses, and had no operation. Since Sept. 4th she has worn new glasses.

Sept. 25.—Headache almost constant since Sept. 10th.

Oct. 10.—Fifteen slight attacks in four days. New glasses given on the 6th, and had twelve attacks on the 7th.

Oct. 24.—To-day wears two pair glasses, one of them new. Much nausea and vomiting of late. Eruption looks bad. Very severe fit on 21st.

Nov. 20.—More headache and cough than for some time. Glasses on r eye changed to-day.

Dec. 22.—Two severe attacks in two weeks, and fourteen slight attacks. Wears glasses.

Jan. 10, 1889.—One severe attack on 2d. Has had less headache, but much nausea.

Jan. 17.—Note from Dr. Webster states a limitation of visual fields was noticed. Central vision $\frac{2}{3}$. Paleness of the optic discs. Probably incipient atrophy.

Feb. 16.—Patient has had twenty-two attacks since last note, one severe. Her general health is about the same.

Feb. 27.—L. hyperphoria $\frac{1}{2}$ °; no esoph.; no exoph. Adduc. 14°; abd. 6° STARR.

March 16.—Is wearing glasses 1° base out over each eye. She had nineteen attacks during February and nine in March, one of which on the 12th was very severe; bruises evident.

April 1.—Glasses changed on March 30th. On 31st she had two very severe attacks, hurting herself badly by falling. She still has headache, and vomits at times and coughs some; but she is fat, and looks well.

May 13, 1889.—Flora K., hyperphoria R. 1°; exophoria $1\frac{1}{2}$ °; abduction 6°. She has been wearing prism 1° base down over R. She is directed to go without glasses for a few days, and come again. WEBSTER.

June 1.—Number of attacks monthly from June 1, 1888 to June 1, 1889: 12, 13, 11, 6, 19, 17, 16, 22, 19, 11, 16, 12. Total 174.

Number of attacks monthly from June 1, 1885. to June 1, 1886: 4, 4, 3, 6, 3, 2, 6, 5, 3, 1, 7, 2. Total 46.

June 15.—On June 6th all glasses were removed, as patient had had seven attacks between June 2d and June 5th, several of which were quite severe, her parents hearing her “working” in bed. She went from June 6th to 15th without glasses; and to-day a new pair were put on. She has suffered from headache, vertigo, nausea, and occasional vomiting for some days.

June 29.—She has worn the new glasses constantly since last visit. She has had eight attacks, one only being severe.

Sept. 18.—She has worn the same glasses all Summer, and no operations have been performed. The attacks have been about as frequent as ever, but are somewhat lighter, and she has not fallen for some time. She has had headaches about once a week, and occasional attacks of vomiting. She has bled at the mouth once or twice lately. The eruption is the same. Digestion good. She looks fat and fairly well. Forty-six attacks since last note, three of them severe.

Oct. 2.—Notice of operation on the 4th.

Oct. 16.—Operation was performed on int. rectus of left eye, and one week later on int. rectus of right eye. Ecchymoses remain. She is to-day wearing prisms 1° l. 2° r. bases out. She now sees double on turning her eyes to either side. During September she had but nine attacks, the least number since 1887.

Oct. 31.—Abd. 7°; abduc. 15°. Exophoria 3° at 20'; 6° at 20". Crossed diplopia with red glass in middle and upper field when looking to the right.

W. O. MOORE.

Summary.—From July 22d, 1883, until April 22d, 1887, she has been under bromide treatment, and the records show that her average was about five attacks monthly, there being very few severe attacks (only four severe in eleven months of 1884 when record was kept with care and the character of all attacks recorded).

From April 22d, 1887 to October 13, 1889, she has taken no medicine whatever, and the records show that her average was about thirteen and a half attacks monthly, the severe attacks having increased in frequency (there were ten very bad attacks in twelve months in 1888).

During this period there has been no change in a severe erythematous eruption which had been ascribed to bromide; her nervous cough has continued at intervals as before, though on the whole it has troubled her less; and she has become subject to severe, and at times continuous, headache and attacks of nausea and vomiting. In spite of these facts, she and her mother affirm that she is better, and show confidence in the treatment. Her personal appearance and care in dress are improved, so that she looks well, and she has gained some flesh; but in all essential respects she is certainly much worse than under bromide treatment. The bruised appearance and the serious injuries caused by the fits had no parallel during the first four years of treatment, while the very great increase in the number of attacks of petit mal cannot but have an unfavorable effect upon her mind.

The ocular treatment has, therefore, after a patient and continuous trial of thirty months, utterly failed to ameliorate her epileptic condition, which has steadily grown worse. It has produced a condition of crossed diplopia when looking to the right.

ANNUAL REGISTER OF ATTACKS.

Case 2.

SEVERE ATTACKS

SLIGHT ATTACKS •

1884....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	X	•
Jan'y.											••																						2
Feb'y.					X ^X _X																											3	
March.													X																			1	
April.											••																			••		1	8
May																••											X					1	3
June.																																?	?
July																						X					••			X		2	5
August											••		••								•												4
Sept'r.			X [•] _•								••												••									1	11
Oct'r.																				X [•] _•								••			1	6	
Nov'r.										••	••	••																					6
Dec'r.								•									•												••				5

Bromide Treatment.

1888....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	X	•
Jan'y.		•															••	••															5
Feb'y.	•X	••	••	••													••	••														1	21
March.	•X	•	•	••	•												•X	••	•								••	•				3	16
April.																•	••	••															9
May.					•		••	••	•												X				•		••	••	•			1	18
June.											•X	•	••											•	••	••	•					2	10
July.									•	••	•																		X	••		1	12
August.	••	•											•				•	•	••	••	•												11
Sept'r.					X							••	•																			1	5
Oct'r.					•	•	12	•													X	•				•						1	18
Nov'r.	•	•	••	••	•	••											•			••	••												17
Dec'r.						X	•	••	••	•					•		•	•	••	••												1	14

1889	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Jan'y.		X	.	•	•	•												X	•	•	•	•									2	20		
Feb'y.				•		•	.	•	•	•	•														•	•	•	•					19	
March.	•	•										X	•	•	•	•														XX	3	8		
April.	.	•	•	•	•												XX	.	•	•	•											2	14	
May.									X	.	•	•	•	•													•	.					1	11
June.		.	•	•	•	•										XX										•							2	13
July.								•	•	•	.										X	•	•	•	•	•							1	16
August.							X	•	•	•	•	•	.														•	•	•	.	•	.	1	19
Sept'r.															•	•	•	.																9
Oct'r.				•	•	X	X										.	•	•														2	11

Ocular Treatment.

No. 3.—John McGrane, age 14, epilepsy, Dr. George T. Stevens. Has been subject to convulsions since he was two years of age. Attacks occur generally once or twice a day, but he has intervals of two or three days, or even a week, between attacks; such an interval may occur once in four or five weeks.

Attack usually commences with a sense of dizziness, which lasts long enough for him to seek a place of safety or warn his friends. He then has convulsions of one or of both sides, more commonly of one side only. He becomes unconscious, and remains in this condition from one to four minutes; but at times the attack is very light. Generally bites his tongue or cheeks. Recovers fully after half or three-fourths of an hour.

Mother thinks that in half-dozen instances she has modified or prevented attack by application of cold water to head.

In the first years of his complaint his attacks were less frequent, but much more severe. At times he has remained in a series of convulsions for two or three days.

Has now habitually a sense of dizziness, and he is much troubled with headaches. Of late the pain in the head is less intense than formerly and the dizziness is greater.

He is habitually constipated, and has been accustomed to use laxatives since he has been epileptic.

Has been under medical treatment, but the mother cannot tell what medicines have been used.

(Signed)

GEO. T. STEVENS.

FURTHER NOTES BY DR. STARR.

Two other children have had convulsions up to the age of three. All children (four) have been very nervous. Father has attacks of cardiac pain very severe (angina pectoris?). Mother had attacks of migraine until age of twenty-two, and as a young woman was subject to "fainting spells."

The boy seems to have some control over the severity of the attacks. If he gets up and runs about at time of attack, it is much lighter, and he says himself that he can "stave an attack off." There is a mental aura, consisting of a sense of fear, so that he wants to hide away, and he often talks during an attack to some one who seems to him to be behind him and whom he never sees. The character of the attacks have wholly changed since his sixth year. Formerly the attacks were distinctly those of grand mal, with involuntary passage of urine. But for the past eight years he has not done this in a fit. The application of cold water never stopped the early fits. Now it does.

(There is evidently a great difference in the nature of the present attacks and the attacks prior to his sixth year.)

While for the past two months he has been having one or two attacks daily, he has had none for the past six days since a change of physicians was proposed. (Is there some mental element here affecting the condition?) There is very marked phymosis, and he has never succeeded in retracting the prepuce. Denies masturbation, but a slight examination of the organ produced erection and sighing, and he knew what was referred to when questioned indirectly regarding masturbation. (Such phymosis has been known to cause such attacks, and several physicians have recommended circumcision in this case.)

No paresis or anæsthesia anywhere. Reflexes normal.

FURTHER NOTES BY DR. DANA.

The boy had eczema capitis, from a short time after birth, for nine months or a year.

Every month he has had a remission of a week.

Seven years ago he had a change of physicians, but got no better after it, or under the new treatment.

Right side of face is more innervated than left, and right palpebral fissure smaller.

Skull symmetrical.

The attacks involve only one extremity, lasting one to four or five minutes.

At commencement of treatment there existed homonymous diplopia, with ability to blend images when prisms equal to 17 degrees with their bases out were placed before the eyes. The tendency inward, as shown when a prism with its base down was placed before one eye, was 29 degrees.

There was constant oscillation of the eyes in a somewhat irregular manner.

The patient has hyperopic astigmatism, corrected by: R. E., S. + 1.75, with C + 2.00, at 90 degrees; L. E., S. + 1.00, with C + 3.00, at 90 degrees.

On May 9th, glasses were prescribed according to the following formula:

R. S. + .75 = C + 2.00, 90.

L. C + 3.00, 90.

On May 13th, tenotomy of the internal rectus of the right eye was made, relieving diplopia and leaving no manifest esophoria. On the following day, however, homonymous diplopia existed. In the three days preceding the tenotomy, the patient had four severe fits. (No daily record of the attacks previous to the 10th was kept.) On the 20th, 22d, and 31st of May attacks occurred less severe than usual. On June 6th tenotomy of the left internus was made.

The patient had a slight attack on June 7th. Between this date and June 24th three attacks occurred. The patient at this time was able to maintain binocular vision while wearing his cylindrical glasses. Homonymous diplopia, however, appeared at once if a red glass were placed before either eye.

A third tenotomy, this time on the right internus, was performed, immediately after which there appeared an excess of correction of about eight degrees. An hour later no excess appeared. Within a few days after the operation, homonymous diplopia reappeared, and during my absence, until about the 10th of September, nothing was done excepting that from time to time observations were made and recorded. During this time, from June 24th until September 24th, eleven attacks are recorded, some of which were very slight, and some of ordinary severity. On September 24th he had one slight attack, and between October 4th and 6th four severe attacks occurred.

During the latter part of June it became evident that associated with the homonymous diplopia was a certain amount of right hyperphoria. No action in regard to this was taken except from time to time to apply prisms with a view of determining the amount, until October 10th, when an operation for tenotomy of the superior rectus of the right eye, for the correction of right hyperphoria, of from two to five degrees, was done. Up to October 24th no further attacks had occurred.

It will thus appear that, during 167 days, twenty-two attacks—light and severe—have occurred, while, under circumstances similar to those preceding his ocular treatment, there would have been expected at least 167 attacks, or on an average one attack per day.*

During the time that he has been under observation there has been marked improvement in his physical and mental conditions. Notwithstanding the efforts that have been made to correct the ocular muscular defects, the patient is still subject to very important muscular anomalies, and has double vision a part of the time.

It has been interesting to observe that at such times as the muscular anomalies have appeared to be most nearly corrected, that the frequency of attacks have been proportionately diminished, and with a return of the tendency to diplopia the attacks have been more frequent.

(Signed)

GEO. T. STEVENS.

33 W. 33d Street, New York City,
October 27, 1887.

No. 4. George G. K., age 13, chorea ; Dr. Seguin. First seen and treated at the Manhattan Eye and Ear Hospital ; Nervous Department, February 25, 1887.

Was a healthy child. No convulsions. Present illness began as simple general chorea five years ago. A few weeks later, had a period of excitement—running around shouting, and lasting some weeks. Details not well recalled by friends. Never quite free from chorea since, though it was often reduced to a minimum. Was able to attend school at times. Was treated most of the time by several physicians. Time of appearance of electric form of chorea uncertain ; perhaps two or three years ago.

Involuntary ejaculation of words began last autumn, and has persisted with intervals of freedom. Ejaculates single words or short sentences, usually obscene, in a perfectly involuntary and frantic manner simultaneously with choreic movement (examples of ejaculation), “damn it” ; “mother’s dead” ; “prick” ; Theresa has a fit” (an older sister has chronic epilepsy), etc. This constitutes coprolalia (Charcot). Echolalia not observed. Chorea consists in very irregular muscular jerks varying in extent and distribution at different times, always, however, single jerks or discharges shown by extension movement of arms, nodding or rotation of head, twitch of naso-buccal muscles.

* An exception must be taken to this statement, for it is recorded in the history that he had gone six days prior to the first operation without attacks, and that he has intervals of two or three days or even a week between attacks.—M. A. STARR, October 28, 1889.

Almost never jerks legs. Trunk muscles somewhat involved as shown by bowing movement.

Ejaculation of formed sounds (words) are rare in last two months, but always gives a cry or grunt representing a clonic action of laryngeal muscles.

Causes. None known. An injury to back of head with partial loss of consciousness occurred three years ago. Masturbation excluded with reasonable certainty. Only case of neurosis or "nervous trouble" in family is elder sister, now aged thirty-six years, who has been epileptic since scarlet fever at eight years.

Treatment. Has had a great deal of medicinal treatment, nature unknown.

Under my care since February 25, 1887. Has had successive trials of solution of chloro-phosphide of arsenic, and of hyoseyama $\frac{1}{200}$ grain, three or four or five a day. This remedy produced a marked improvement for a few weeks. Rest always seems beneficial.

Physical Examination. Electric chorea as above, irregular single jerks of muscle-groups in neck, trunk, arms, and face, and of laryngeal muscles. The diaphragm apparently involved sometimes. No paralysis or anæsthesia. Heart normal. Pupils equal and normally active. Marked anemia. Organic functions well performed.

Occasional headaches from the first, at times very severe. Occasional vertigo on sudden exertion after a period of quiet.

(Signed)

E. C. SEGUIN.

Confirmed by

M. A. STARR.

May 20, 1887. After examination by Dr. Starr the patient is sent to Dr. Stevens. Utters grunts and cries with choreic jerks, but coprolalia has entirely ceased.

No formula of ophthalmic examination furnished.

May 25. Note from Dr. Stevens. "We will operate on Geo. F. K. (Dr. Seguin's patient) for esophoria, on Friday, May 27th, at 1:30 P. M."

June 3. Note from Dr. Stevens. "We will operate on Geo. F. K. (choreic) for esophoria, Monday, June 6th, at 1:30 P. M."

June 8. Note from Dr. Stevens. "I see no objection to allowing a little quinine to K. He thinks he is rather better; perhaps he is." Pil. quin. sulph. gr. iij *ter die*, was ordered by me.

June 20. Note from Dr. Stevens. "Dr. Stevens requests me to say that he will operate on —, on Geo. F. K. (patient of Dr. Seguin) for esophoria on Friday, June 24th, at 1:30 P. M."

October 11. Note from Dr. Stevens. "There will be an operation on Geo. F. K. (choreic patient of Dr. Seguin) for hyperphoria, on Friday, October 14th, at 1:30 P. M."

October 4. Note by Dr. Webster. "I saw Dr. Stevens operate upon young K., Dr. Seguin's case of coprolalia (?) to-day. The boy had had previous tenotomies of his right superior rectus and both interni. The condition immediately before to-day's operation was: abduction 6° , esophoria 2° , right hyperphoria $\frac{1}{2}^{\circ}$. Dr. Stevens did a partial tenotomy of the left internus to-day, immediately after which there was: abduction 8° , exophoria 1° , and hyperphoria 1° ."

October 22. Presents substantially the same chorea and laryngeal sounds. Last night a couple of bad words came out, "damn it," etc. He says: "I felt it coming but could not hold it back." Claims to have been better, or nearly free from symptoms for a week without "grunting"—several times in the summer. At times was two or three days without chorea (?). Choreic movements are less extensive. General condition excellent. Was better (of chorea) while in the country at play. Operations have been done on the 14th and 21st of this month (no notice sent).

December 5. Note from Dr. Webster. "I was at Dr. Stevens' on the 3rd and witnessed the following: Geo. K., exophoria 2°, abduction 10°. Advanced left internus, leaving esophoria 4° and abduction 2°."

December 9. Mr. C. (father of Elizabeth C., case 1) voluntarily states that he has recently heard the coprolalia boy grunt in Dr. Stevens' office; not as loud as formerly, but very audibly, so much so that one morning, not long ago, he badly scared a lady in the waiting-room.

December 22. Presents same symptoms, viz.; sudden electric choreic jerks of neck and shoulders with occasional slight jerks of hands. With a great many jerks he grunts ("ong" or "eng" with French sound). Jerks occasionally extend to the legs (flexion movements of knees). I could hear him in my reception room, separated from me by closed solid doors. He states that since last call he has not had five hours without grunts. Has less of it while busy or walking about. No bad words since last visit.

December 30. Chorea worse, with frequent grunts. While sitting has same movements as formerly, viz.: a nodding or flexion jerk of arms; usually with a grunt, sometimes with an inspiratory laryngeal sound. The force of the movement extends to the legs. While walking has distinctly right hemiplegic jerks of arm and hand, and of leg; the foot is made to strike the floor with its anterior extremity. The patient says he "stubs his toes," and has worn the front end of the sole of right shoe more than the left. There is no drooping of the shoulder or dragging of the right foot as in ordinary hemiparesis. The choreic motion is both more violent and more frequent; tongue deviates to right. [This condition is 28 weeks after transfer of patient to Dr. Stevens.]

1888. February 17. Much chorea and grunting this morning. I heard him in my reception room through closed solid doors. Claims that he has some days without grunts. Says that bad weather, pork, and pickles make him worse. Nothing has been done to eyes since the end of December. Wears spectacles constantly. Says that right arm jerks most; tongue goes to right. General condition good.

February 24. Note by Dr. Moore. "Geo. K., patient of Dr. Seguin. Hyperphoria right 2°. Tenotomy of right superior rectus. After, hyperphoria $\frac{1}{4}$ °."

March 16. "Another operation done on right superior rectus about three weeks ago; first this year. Since the 14th, left glass of spectacles covered with translucent plaster. Has about the same amount of chorea. This morning it is universal, but more marked in right limbs; most of all in head and neck. Does not grunt just now, but has done so this morning."

April 20. Note by Dr. Moore. "Exophoria 3°. Advanced by a single stitch the left internal rectus, producing esophoria 16°."

May 4.—An operation done two weeks ago. Is very anæmic, and suffers from rheumatic (?) pains in right hip, and has some herpes labii. Chorea unchanged; rather worse to-day than on average; no grunts. Patient says he seldom grunts now, but just at this moment makes a slight grunt.

June 1.—“Two weeks ago (about) had an operation performed, and after it grew rapidly more choreic and ‘grunty.’ On Tuesday (29th May) Dr. Stevens ‘took a reef’ in the left external rectus, and some improvement soon followed. Is now more choreic, and grunts more than for many months. Denies extraneous causes of aggravation, such as fright, ill-health, etc. Movements are as before, perhaps more head movements. Speech distinct. Tongue deviates to right; grasps of hands equal.” [It is to be observed that the choreic movements are about as bad as ever, one year after beginning of treatment.]

Nov. 4. Note by Dr. Webster. “K., the coprolalia patient, showed hyperphoria 2° right eye; esophoria 1° to 2°, and abduction 5°. Dr. Stevens advanced the left superior rectus just enough to correct the hyperphoria of the right eye, and about 10° more. This operation was rendered necessary on account of an over-correction of left hyperphoria by a recent tenotomy.”

Nov. 28.—“About three weeks ago, after an operation, symptoms increased a great deal; loud explosions of laryngeal sounds, like a mixture of ‘ha’ and ‘hein,’ accompanied by jerks of head, shoulders, arms, and occasionally legs (only right leg). Looks pale and miserable, from a ‘cold’ which developed two weeks ago. Had fever and some sore throat, for which he was in bed several days. Has ‘explosions’ every few moments while talking with me. Much less when alone and when reading. I recognized George’s presence from the second floor of my house to-day as he came in by his noises. No words now escape him. Is free from ordinary chorea.”

Dec. 3.—Note by Dr. Moore. “Exophoria 2°. Advancement of left internal rectus, leaving abduction 2°, and esophoria 4°.”

Dec. 7.—An operation done on left internal rectus on Dec. 3d. Worse since. On 5th had severe right supra-orbital neuralgia. To-day worse than last week. Extensive jerks of face, head, and whole body. Sudden electric jerks, with a cry or semi-hiccough. While waiting in my hallway was very noisy. No words ejaculated. Admits great irritability. General condition better.

Feb. 6, 1889 (about).—Is much better; presenting but little chorea, and seldom crying out or grunting. A formerly used pair of spectacles, was put on a week ago.

March 1.—About Feb. 10th caught a severe cold, with sore throat, alveolar abscess, etc. Great increase in chorea followed. Is now pale; has large choreic clonic movements of face, neck, and arms, with quite loud grunts. Mouth opens wide when the cry comes. Is almost as choreic as when transferred to Dr. Stevens. This is the second time that the event of an inter-current illness has been followed by marked aggravation of the chorea.

George thinks that he has had in all nearly twelve operations done on his eye-muscles. He has had four different sort of spectacles, besides frequent changes in their arrangement and order of use.

March 19.—Hyperphoria R. 3°; abd. 7°. Has worn 3° prisms for weeks. Operation: tenotomy of R. sup. rectus, after which no hyperphoria.

W. MOORE.

March 27.—Operation on R. ext. rectus on 21st. Has jerked more since, and to-day shows large hard jerks of neck, arm and trunk, with grunts, which could be heard at a distance. "Cold" gone, but is still pale. Has a bad herpetic sore (double) on l. lower lip. Ord. ung. acid carb.

April 24, 1889.—Has been much better for one month. He has had some days without a single sound. Has had diplopia when looking off to his right. New glass put on yesterday corrects this, but patient speaks of them as very strong, and thinks he is worse this morning. Makes a few whoops or grunts, and shows a good deal of choreic large movements of the right arm, both legs and neck (very little of last). Speech good. General condition good. Has grown a good deal.

May 11.—"I saw Geo. K. to-day. He was barking at frequent intervals, but not so loudly as he used to, and the excursions of head and upper part of the body were much less extensive than formerly. He is wearing prism 2° , base out.
D. WEBSTER."

Oct. 22, 1889.—Had much chorea until end of August, after that was much better. About the middle of September an operation was done on his left internal rectus; for two weeks he was worse; then began to improve. Last week he was very well; several days without grunts. Another operation was done on his left external rectus on Oct. 19th. The eye is still sore. To-day, although much better than when last seen (in June), he grunts pretty frequently and has choreic jerks of shoulders and hands; legs quiet.

Oct. 31, 1889.—"Dr. Stevens sent me Geo. K. this morning, and I made the following notes. Dr. Stevens has operated upon his eyes several times, and George thinks he is much improved in several ways. He sleeps better, feels more lively, has fewer headaches, doesn't throw out his right foot and right arm as he used to, and does not bend over nearly to the floor as he used to. He still whoops very often, but not nearly so often as he used to. *He sees double when looking far to the right*, but says that does not annoy him any. In the general use of his eyes for reading, etc., he is no worse than before operations were commenced. He has a sandy feeling in his eyes at times, due to slight conjunctivitis.

V. $\frac{29}{15}$ — E. both. Hyperphoria L. $\frac{1}{4}^{\circ}$; exophoria $\frac{1}{2}^{\circ}$; in accom. 2° ; abduc. 7° ; adduc. 30° ; sursumduc. R. $\frac{3}{4}$; L. I. Fields, roughly tested, seem normal. Ophthal. appearance normal.
D. WEBSTER.

Summary.—This case of chorea has not been cured or much relieved by nearly two years of the ocular treatment. The patient has shown truly extraordinary patience and perseverance in the pursuit of a cure.

When sent to Dr. Stevens, medicinal treatment (by hyoscyamia) had entirely removed the coprolalia, and somewhat diminished the chorea. The coprolalia reappeared while the lad was under Dr. Stevens' treatment, viz, Oct. 21, 1887, four months after beginning of treatment. At periods of twenty-eight weeks, and of one year from beginning of treatment, it is noted that the chorea is as bad as at first. This case is at present improved, but is in no sense cured. He has diplopia as a result of treatment.

No. 5—Aggie H., age 13, epilepsy; Dr. Dana, through Dr. E. D. Fisher. Parents healthy; one aunt hysterical; family history otherwise negative; natural birth at full term. Between the 6th and 24th month she had from 6 to 10 convulsions, then they ceased entirely. The present disease began at the age of 11 years without known cause.

She suffers from attacks of *petit mal*; she has no spasmodic movements and no attacks of *haut mal* at all; she has had as many as 6 to 10 daily; she is now having 2 to 4 daily; she is fairly well grown and intelligent, with no physical deformities; skull is symmetrical and of average size. Diagnosis confirmed by Dr. Starr.

History of ocular conditions.—Examination by Dr. Moore, Jan. 3, 1888, showed: Abduc., 4° ; Add., 12° ; orthophoria.

The same condition was found by Dr. Webster, Jan. 4th.

Dr. Stevens thought that she had latent hyperphoria, and on Jan. 4, 1888, he operated, performing a partial tenotomy of her right internus, dividing the tendon at its attachment, causing at the time, exophoria, 7. Next day there was abduction, 8° ; esophoria, 1° .

There is notice of operations to be performed on Nov. 19, 1888, and on Feb. 10, 1888, but no ophthalmologist's records.

On Nov. 26, 1888, Dr. Webster found: esophoria, 2° to 6° ; abduction, 5° .

On Jan. 22, 1889, Dr. Webster found: esophoria, 5° ; abduction, 6° ; on this day Dr. Stevens did a resection (modified advancement) of the right externus, leaving her with: exophoria, $1\frac{1}{2}^{\circ}$; abduction, 10° . March 16th, notice of operation on March 19th, for esophoria.

March 19th, 1889: esophoria, 5° ; abduction, 4° ; operation on L. E. Resection of tendon of left externus (so-called by Stevens), really an advancement of the externus. After operation: exophoria, 1° , with abduction 9° .

This patient is said to be better by Dr. Stevens, who claims that after the first operations, the "attacks, 50 or 60 in a day," were reduced to 6 or 7 daily. The mother thinks she is better. This patient has strabismus convergens, as her eye turns in most of the time.

History of the seizures.—On Nov. 26, 1888, the mother states that the patient had had only 3 or 4 seizures daily since the operation in Jan., and that the seizures are milder; she thinks the child better.

On Jan. 22, 1889, the case is said by the mother to be improving. The child still has the seizures every day.

May 13: esophoria, 5° , and abduction 5° . She is wearing prism 1° base out over each eye. Tenotomy of right internus was done to-day, leaving orthophoria and abduction 8° .
D. WEBSTER.

Sept. 17, notice of operation.

Oct. 29. The girl is having from 1 to 3 attacks of *petit mal* daily, and cannot, therefore, be said to be in any marked degree improved, as at the beginning of treatment she was having from 2 to 4 daily.

No. 6.—C. D., female, age 9, epilepsy, Dr. Stevens.

General History.—Was a healthy child until the age of three years, when she had whooping cough very severely, which lasted several months. First attack of epilepsy occurred after a cough, had continued about a month and

was very severe, lasting about four or five minutes. About a month later had a second attack, then soon another. From that time there has never been an interval of a month between attacks; these having occurred during the past two years about once every other day, and for the past three months the average is more than once a day. Petit mal occur also from once in a few days to many times in the same day. Before a regular attack sometimes experiences pain in the stomach, but this is so habitual a complaint that it may be said there is no warning. In attacks there are convulsive movements at first. Often the attack is ushered in with a scream; sometimes says she is frightened. Attacks vary in duration from two to ten minutes. After attack sometimes recovers quickly and at other times is drowsy.

At seasons varying, but averaging about once a month, is in a state of profound dementia, which continues from ten days to a fortnight. During the more lucid interval is not bright, but has a sort of infantile simplicity; and answers questions within her comprehension correctly. Is feeble-minded at best. Walks with a sort of stagger, and "interferes," the toe of one foot coming in contact with the heel of the other. Very awkward in all her movements. She calls letters correctly, but cannot read common words of a few letters.

Is habitually constipated and takes drugs for the trouble. Has much dyspepsia. Has been under treatment by physicians in this country and in Europe.

Diagnosis confirmed.

C. L. DANA, M.D.

April 20, 1888.

C. D., Hy. R. 3. Tenot. R. sup. rect. after has $\frac{1}{2}$ over correction.

W. O. MOORE.

Nov. 7, 1888 — "C. D. was taken to the country in July. Her aunt, in whose charge she has been, called on me in September; said that the child was greatly improved mentally and physically. She asked my advice about bringing her to the city in September, and it was decided that she should come in October. She did not, and I have not heard further from her.

GEO. L. STEVENS."

No. 7.—E. F., male, age 14, chorea or tic convulsif; Dr. Stevens. Had at the age of two years frequent convulsions, which occurred in considerable numbers until he was five years of age, when convulsions ceased and he became choreic. He has continued to have chorea up to the present time. The choreic movements are of the so-called electrical type. They are mostly confined to the head. The face jerks, eyes snap, and he utters at times short and sharp vocal sounds resembling the bark of a dog. At times in the course of his complaint these barking sounds have been a conspicuous feature of his condition. At present these sounds occur somewhat rarely.

Is and has been accustomed to have severe headaches. Has had sensations of numbness of hands and feet.

He has been under the treatment of several physicians, with no material relief.

I have seen this patient, and confirm the diagnosis of chronic chorea so-called or tic convulsif.

C. L. DANA, M.D.

W. R. BIRDSALL, M.D.

April 20, 1888. Hyperph. R. 3. Tenot. R. sup. rect., and afterward 1 hyp., L. E.

(Signed) W. O. MOORE.

Nov. 7, 1888. "The chronic boy has been in town for a few hours on two or three occasions. I have been unable to arrange for him to come at a definite time, and will do so soon if possible. I think that I can arrange it.

GEO. L. STEVENS."

Nov. 26, 1888. Esophoria, 4°; abduction, 9°. Although he manifested no hyperphoria, yet that condition was supposed to be latent and to account for the apparent discrepancy.

(Signed) D. WEBSTER.

No further notes have been sent to the Secretary.

No. 8.—G. H., male, age 10, epilepsy; Dr. Stevens. Was first child. Has large head, well formed. As an infant extremely nervous and sensitive. Intellect unclouded. First convulsion at the age of three, followed during the next three years by about three convulsions each year. In each of these, eyes were set or rolled to left, pupils dilated, head turned to left, limbs in convulsions, grinding of teeth and foaming at mouth. After one or two of these attacks patient appeared for a time to be lifeless; pulse and respiration ceased. During past six years has had somewhat frequent attacks of much less violence. Becomes in these attacks unconscious, and when partial consciousness returns talks wildly, swallows violently, has violent twitchings of the extremities, and pupils dilate. These attacks are usually controlled by an anæsthetic (chloroform). Other attacks occur resembling epileptic vertigo, lasting but a few minutes, and usually occurring three or four times in the twenty-four hours. Such a succession of attacks occurs once in three or four weeks. Then an interval of some weeks follows.

Father thinks that if these premonitory attacks are not controlled by the anæsthetic, they will usually result in the more severe form of convulsion. These lesser attacks leave the patient weak and pale for two or three days, and inclined to sleep much. Goes into profound slumber after each convulsion. From the age of six until nine was free from the more severe form of convulsion, but after being sent to school for a few days a convulsion of great violence and duration occurred. The last great convulsion was in June, 1887. Is active and wide-awake, but pale, and lacks endurance. Memory is excellent. Has taken bromides and strychnine regularly for five years past.

Diagnosis confirmed.

C. L. DANA.

My understanding of the history was, this patient has very severe attacks of *haut mal* rarely.

Peculiar "premonitory" attacks every one to three weeks.

Ep. vertigo or petit mal several times daily.

C. L. DANA, M.D.

Patient seen at Dr. Stevens' office April 4, 1888. As the grandmother related the case to me, patient had his first convulsion, as stated above, at the age of three; the next attack was about one year later; the next, six months

later; six months later, another. For the next few years attacks were less frequent, not more than three or four, and last attack, as stated in notes, was in June. These are the convulsive attacks described. The so-called premonitory attacks, according to the boy's own description, are: First a feeling of nausea; at this warning he goes and lies down; slight vertigo accompanies it; then he feels sleepy, and goes to sleep, as he says. It is on waking that his ideas are confused and in which he talks incoherently. Grandmother states positively that convulsive twitching never occurs in these attacks, though he is confused and restless after his sleep. She states that after he lies down the face becomes quite red, and thinks that a pale stage (at the time he feels the nausea) precedes it. She thinks the grand attacks would occur if medicine were not given; but only one attack, the last one, has followed the attack of vertigo. This did not take place until the day following the premonitory attack. Anæsthetics have not always been used, but other medicines instead, she knew not what.

Diagnosis of epilepsy confirmed, the so-called premonitory attacks being in the nature of epileptic vertigo. The period of incoherent talking being a post-epileptic phenomena.

W. R. BIRDSALL.

April 12, 1888. Esoph., 8°; abd., 5°; tenot., 1, externus; after which abd., 12°. Esoph. still 4°.

December 3, 1888. Abd., 4°; esoph., 5°. Tenot. r. int., leaving esoph., 2° to 5°; abd., 9°.

Notes made May 25, 1888, by Dr. Birdsall:

Grandmother states that he has not had any convulsions, nor any of the attacks of vertigo (premonitory spells) since March 28th. Patient himself states that about April 27th he had one day the feeling that he was about to have an attack; resolved that he would think of something. It did not come on, and none has occurred since. Tenotomy was first performed April 6, 1888.

November 7, 1888. "The bright lad, from the western part of the State, with epilepsy, was in town for a day about a month ago. I did not know of his coming until he was here. I expect him again soon, and will try to have you see him. He was seen by Dr. Birdsall just before the summer vacation.

"GEO. L. STEVENS."

March 3, 1889. "Patient's general appearance is better than when last seen; looks as if he had increased in weight. He states from memory that he thinks he has not had any premonitory attacks, but has had one severe fit this month.

"W. R. BIRDSALL."

No. 9. David Sh., aged 12 years; epilepsy; Dr. Starr. No family history of epilepsy or insanity. Natural birth. First fit at age of fifteen months, lasting three hours when teething. After that he occasionally had "fainting spells" lasting five to ten minutes. When five years old these increased in severity and frequency. At the age of nine, regular severe general convulsions commenced, with biting of tongue, fall and cry, and followed by sleep, and these have continued ever since at varying intervals, sometimes as often as two in a week. In addition to the attacks of grand mal he also has the

“fainting spells” not attended by convulsions (petit mal). He has no aura of any kind prior to the attacks. He is a bright boy, has never had headache, has had no bad habits, has a good memory and is in good health. He is constipated and his mother is sure that when his bowels are not moved daily he is more liable to attacks. Physical examination negative.

Records of attacks from October 24, 1887, to April 28, 1888. November, 1887—3 severe, 3 slight attacks ; 5 visits. December, 1887—5 severe, 2 slight attacks ; 5 visits. January, 1888—record lost ; 1 visit. February, 1888—1 severe, 5 slight attacks ; 2 visits. March, 1888—2 severe, 5 slight attacks ; 3 visits. April, 1888—1 severe, 3 slight attacks ; 3 visits.

During this period patient was taking bromides of potash, soda, and ammonia, in doses varying from thirty to sixty grains daily. All medicine was stopped on April 23d.

STARR.
DANA.

Examination of eyes, April 23d :

R. V. = $\frac{20}{15}$ Hm. 0.75 D. Ophthalmoscopically
L. V. = $\frac{20}{15}$ Hm. 0.75 D. no lesion of either fundus.

No hyperphoria ; esophoria $\frac{1}{2}^{\circ}$; exophoria in accom., 9° ; abduction, 6° ; adduction, 20° . R. 1. L. 1.

DR. WEBSTER.

May 2. Notice of operation.

May 4. Examination by Dr. Stevens. Right hyperphoria, $3\frac{1}{2}^{\circ}$; esophoria, 7° : tenotomy superior rectus ; after which, left hyperphoria, $\frac{1}{2}^{\circ}$.

October 31. Reports by request. Mother states that he attended regularly until the middle of September when, as the fits had constantly increased in frequency and severity, she had ceased to attend. During the summer he has been operated upon several times and has worn glasses constantly, but has taken no medicine.

Records of attacks from April 28th to September 4th : May, 1888—11 severe, 6 slight attacks ; June, 1888—2 severe, 7 slight attacks ; July, 1888—6 severe, 2 slight attacks ; September, 1888—11 severe, 4 slight attacks.

CASE 9.—ANNUAL REGISTER OF ATTACKS.
Severe attacks, x. *Slight attacks, .*

1888.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	x	.
Jan'y.																																	
Feb'y.			•	•		•	•	•				x																				1	5
March.						x	•						•								•				x	•						2	5
April.																						•			•	x						1	3
May.					x	xx	xx	xx	•							•			x	x		•							•			11	6
June.		•	•	•						x								x	•	•	•											2	7
July.			x	xx	•													x			xx											6	2
August.	x					x		x										•	xx	•	•									x	6	3	
Sept'r.	•x	x	•			x		x	x	x	x	xx									x			•								11	4
Oct'r.			xx	x																													
Nov'r.																																	
Dec'r.																																	

The mother was urged to return to Dr. Stevens, but refused absolutely. The boy's general health is about the same, but during the summer he has complained frequently of headaches—not present before.

The result of stopping the bromide on April 23d was the occurrence of nine

severe fits between May 6th and 9th. Seven of the severe fits in Sept. occurred within five days, at the time of his father's death. But even eliminating these two factors from the record it is evident that under the ocular treatment the fits were twice as frequent, and during this treatment there was no tendency to improvement.

1889. October 30. He is now under Dr. Jacoby's care. During September, 1889, he had two bad and two slight attacks; October, 1889, he had two bad and three slight attacks. He now has

R	25
V	—
L	15

Adduction, 19° ; abduction, 7° ; esophoria, 4° ; left hyperphoria, $\frac{1}{2}^{\circ}$.

No. 10.—Eva S., age 16, native U. S., physician Dr. Fisher; complaint, chr. chorea.

Family history good. Well until three years ago. Sudden onset of chorea, after trouble in family. No rheumatism. No cardiac. Only cause known is emotional shock. Condition has varied; at times severe, at times slight; but continuous for three years in spite of treatment by arsenic, etc. At present moderate chorea r. > 1 . face not involved; neck jerks; tongue has jerked, but does not now jerk. No cardiac. Headaches. No dyspepsia. Constipation. Menses every three weeks seven days. Slight leucorrhœa. Menses began one year after chorea. No tenderness of spine or abdomen. Anæmia.

Ocular Exam. (Dr. Webster) May 4th.—Hyp. R. $1\frac{1}{2}^{\circ}$. Exoph. in accom. 4° . Abd. 5° . No esoph. No exoph. Myopic. astig. R. $\frac{2}{100}^{\circ}$ +. L. $\frac{2}{50}^{\circ}$ +.

May 25.—Notice of operation on 28th.

June 15.—Improved.

“ 25.—Still better.

July 25.—Relapse, but not so severe.

Aug. 16.—Almost quiet until menses, when again worse.

Sept. 11.—Movements returned; lasted only one week.

Oct. 10.—Operation on left eye.

Oct. 11.—Improved.

Nov. 11.—Tremor seems to involve muscles in usual situation, viz., upper extremities and shoulder and neck. Lower extremities also affected. Two patches of proriasis noticed on legs above knees. FISHER.

Nov. 20.—Has less headache, but still has sharp pain in left temple at times. Menses irregular, usually seven to eight days before time. The chorea is better, but still persists; greater on right side than on left. Upper lip twitches, and there is an expiratory sound in throat at times, which is said to have been worse. Both arms twitch and also the muscles of the neck. Legs twitch slightly. Knee jerks equal. Is wearing double glasses. STARR.

Dec. 5.—Exophoria 3° . Abduction 10° . Operation. Left internus advanced, leaving esophoria 4° . D. WEBSTER, W. O. MOORE.

Jan. 22, 1889.—Exophoria 4. Abduction 9. Operation. Resection (modified advancement) of the right internus, leaving orthophoria and abduction 6° . D. WEBSTER.

Feb. 17.—Slight chorea in extremities, better than at last visit; r. greater than l. Slight noises in her throat frequently. There is no esophoria or exophoria nor hyperphoria, but there is a slight apparent int. strabismus, and abduction is 10° , while adduction is 19° . Is to have another operation this week. The chorea is slighter than it was at the beginning of treatment, but has not disappeared, and has advanced to the larynx, which was not formerly involved.

March 19.—Orthophoria. Abd. 6° .

W. O. MOORE.

April 24.—The jerking is slighter, but visible in neck, hands, arms, legs and feet r. $>$ l. She was much worse for two weeks after last visit; jerked constantly. Then Dr. Stevens operated on the left eye, and subsequently the jerking became less. She has been taking medicine for psoriasis, which still affects her, there being large spots of psoriasis over her limbs and body. She has suffered from abdominal pains, with constipation, and is at present quite anæmic. Is wearing two pair of glasses at present. No eso. or exophoria, but slight $\frac{1}{2}^{\circ}$ r. hyperphoria. Referred to Dr. Elliot for treatment of psoriasis, with request that no arsenic be used.

Oct. 2.—She has been wearing the same glasses all summer. No operation. The chorea has varied; has never been absent. For the past four weeks has been more nervous, and at present twitching is present in all extremities, right side greater than left; and occasional sound in larynx is made. Psoriasis is very bad. Has had headache during the summer. Is now pale and thin. She does not think she is looking well, and is not. No medicine has been given for psoriasis.

Nov. 2, 1889.—“Report on the case of Miss S., whose eyes I examined to-day: She is wearing

Rt. $+ 2.75$ D. c. axis 105° .

Lf. $+ 2.75$ D. c. axis 75° .

and with these glasses her vision is $\frac{20}{20} +$.

R. V. = $\frac{20}{20}$ —: $\frac{20}{20}$ — with $+ 2.25$ D. c. ax. 105° .

L. V. = $\frac{20}{20}$ —: $\frac{20}{20}$ — with $+ 2.50$ D. c. ax. 75° .

Orthophoria with or without her glasses. Abduc. 6° . Adduc. 36° .

Ophthal. No lesion observed.

The patient states that she has had six operations upon her eyes, and that she is unimproved. She has no diplopia or asthenopic, or other trouble with her eyes. In short, she does not complain of her eyes at all.

D. WEBSTER.

Summary.—No improvement whatever after eighteen months of continuous treatment.

M. A. STARR.

No. II, Miss L. P., Chorea; Dr. Stevens.—Has violent twitching of arms and legs. Eyes blink continually. Never looks at an object for more than a moment at a time. Arms wave about in wild gesticulations. Each hand moves up alternately as if to brush her short hair from her forehead; is continually disarranging her hair and garments with her movements. In walking she moves rapidly forward a short distance and then suddenly stops as if hesitating. (arms and eyes in continual motion) and then again advances. In talking her speech is characterized by the same irregularity and extravagance that is part of her general movements. When spoken to, although she grasps your question in-

stantly she hesitates, saying: "Sir,"..... "Sir," and then suddenly breaks out with a verbose answer, correct and rational, but rapidly and hysterically, giggling at every opportunity and withall manifesting decided intelligence and quick perception. The trouble began three years ago while at school. She suddenly began to be irritable both mentally and physically. This was noticed by herself and family, but she was allowed to remain at school until eight months ago, when her restlessness and irritability became so marked that her parents were obliged to remove her from school. Since that time has gradually become worse until the present time when she appears as stated above. The presence of her mother is a continual irritation to her. She speaks sharply and irritably whenever her mother addresses or speaks of her. Has lately grown to dislike everything—music, studies, people, etc., that she formerly took most pride in and cared especially for. Heart's action somewhat irregular, but otherwise normal. No organic lesions discernible by ophthalmoscopic or other examinations.

The above corresponds with the account given to me and with the symptoms as observed by myself.

C. L. DANA, M. D.

July, 1888.

Nov. 7, 1888.

"The chronic girl has been in the office from time to time, but so irregularly, that I did not think worth while to notify you when she might be expected. She has of late made three visits at appointed times and I think that she may now be relied upon to keep an appointment. I will endeavor to have her here (I think she will come, without doubt) on Monday, at one o'clock, or on another day if it will be more convenient to you."

GEO. T. STEVENS."

May 3 1, 1889.

Miss L. P., æt. 18, was seen by me at Dr. Stevens' office, at her *final visit*. She had been under Stevens' care a year; was operated upon for hyperphoria several times, and now shows Hyperphoria 0°, Exophoria $\frac{1}{2}$ ° and Abduction 9°. Dr. Stevens stated in her presence that when she first came under his care she was affected with chorea of the most violent type. She was unable to hold her water, and had great difficulty in getting a boarding-house on that account. She would urinate while at meals, in bed, and in Dr. Stevens' waiting-room and office. This part of the trouble is *entirely well*. She still has some chronic movements, but expresses herself as a *hundredfold better*. "An entirely new girl, in fact," than she was. She then *hated* everything: She now enjoys life and returns to her home very happy.

Dr. WEBSTER.

No. 12.—Gertrude E. W., aged 24 years, epilepsy. Dr. Dana.—Father died of phthisis, mother has migraine, sister has migraine; no epilepsy in family. Well until age of 19, when fright caused present attacks. Menses at 16, regular. At first developed slight seizures, which increased in frequency until in fall of 1888 she was having two or three a day. During the attacks she loses consciousness, has spasmodic twitchings of face and arms, would fall if not seated, has headache and sleeps afterward. In summer of 1888 had four severe convulsions, during which she bit her tongue. Since epilepsy began migraine has stopped. Good physique, fair health, some constipation, digestion good, courses regular,

pupils large and mobile. She is now having petit mal two or three times a fortnight, usually about time of menses; had one attack last week; was unwell from April 16th to 22d. She has been under bromides for the past six months, and these have reduced the number of attacks as stated.

C. L. DANA,
M. A. STARR.

The ocular examination made May 11th by Dr. Webster showed that she had: R. hyperphoria, 7° to 9° ; esophoria, 8° ; abduction, 5° ; myopia, (4.50 D.) Rt. and compound myopic astigmatism (8 D. = — 3.50 D. C. ax. 180°) left.

Oct 23.—She has had numerous operations during the summer; she feels better; she has had no severe convulsions since May 23, when she had one; she has slight seizures three or four times monthly.

Nov. 4.—She reports that she is now having only one or two attacks weekly, whereas before Dr. S. operated she was having five to six severe attacks a week. This latter statement is entirely inconsistent with the history as taken in April, and is therefore worthless. Her condition is therefore about the same as when she was under bromide treatment. But contrasted with her condition last fall under no treatment whatever, when she was having one or two attacks a day, she is very much improved.

Subsequent Clinical History.—This patient was steadily under Dr. Stevens' treatment up to time of present record, Nov. 4th, and during this time took no bromides. Two weeks after leaving off bromides, May 23d, she had a haut mal attack and another Sept. 15, 1889; she has had no others. The petit mal attacks have been reduced from one almost every day to one or two weekly. When seen in April she said she was having petit mal attacks two or three times a fortnight, (vide record); now she says she had them nearly every day. A letter from Dr. Webster says that when seen by him Nov. 4th she was having petit mal attacks once or twice weekly. Hence her stories disagree and the question of her improvement must remain an open one. She is certainly not cured.

Ocular History.—She has been operated upon nine times (Dr. Webster) and has worn correcting glasses for the myopia and astigmatism.

The following are records of these operations from notes made by Dr. Webster:

May 11.—R. hyperphoria, 7° to 9° ; exophoria, 8° ; abduction, 5° .

May 13.—Operation of tenotomy of right sup. rectus, leaving R. hyperphoria 3° .

May 31.—R. hyperphoria, 1° ; exophoria, 7° . Tenotomy of right internus, leaving exophoria, 3° , and no hyperphoria.

Her condition Nov. 4th, as reported by Dr. Webster, is:

	20
R. V.	— with 4 D.
	30
	20
L. V.	— with 9 D.
	70

Hyperphoria, 0° , without correcting glasses; exophoria, 2° .

With her myopia corrected, exophoria, 1° . Ophthalmoscope shows large staphyloma posticum both eyes, the left much larger and extending all around the disk.

No. 13.—Mary A. M., school-teacher; epilepsy; Dr. Dana.—The family history is good. The patient had no infantile convulsions or nervous diseases during childhood; when 13 or 14 years old she began to have attacks characterized by scintillations of light in the left eye, followed by blindness, but not by loss of consciousness and unaccompanied by twitchings or pain. They lasted one to three minutes. The present attacks came on at the age of 22, after unusual hard work. They came on at first at night, during sleep, and she had at first only three or four yearly. They came on after menstruation, but the menstrual influence was not absolute. About four years ago she began to have them in the day time and they increased in number until when seen by me in March, 1889, she was having two or three monthly. The attacks were preceded by the visual aura such as she had had for many years. They were accompanied by some convulsive movements and loss of consciousness, but were as a rule brief and abortive though occasionally severe. She had no *petit mal*. She had taken bromides a great deal since 1884, though not regularly. She complained of mental hebetude and loss of memory, though she was able to continue her school duties. She took bromides for but a short time under my direction, but was soon referred to the Commission for treatment.

Ocular examination by Dr. Moore, May 11, after an operation by Dr. Stevens, showed strabismus divergent ten degrees and strabismus convergent Rt. three degrees, myopia and myopic astigmatism. She went to Dr. Stevens March 28th and was first operated upon May 11th.

Subsequent clinical history up to Dec. 2, 1889 :

The patient reports that she had

In March,	4	light seizures.	
" April,	8	"	
" May,	7	"	(2 severe).
" June,	9	"	(4 ").
" July,	18	"	(3 ").
" Aug.,			(1 ").
" Sept.,			Record incomplete.
" Oct.,	5	"	" "
" Nov.,	11	"	(1 ").

She states that her mind is clearer, she feels better, her attacks are lighter and not preceded by the aura; they are not lessened in number; she feels improved.

The records show very little improvement, as will be seen in the disease itself, although her subjective sensations are better. She still has the abortive attacks as often as ever and still has severe attacks.

OCULAR HISTORY.—The patient was operated upon five times. The records are given.

May 11.—Tenotomy of right externus with tendon resection of left externus, leaving exophoria five degrees. Same operation had been done on left eye a week before.

May 13.—The eye showed exophoria four to six degrees, with abduction twelve degrees.

Oct. 26.—Examined by Dr. Moore, who found : Abd. six degrees, add. twenty degrees, esophoria two degrees at twenty feet.

No. 14.—Agnes H., 31 years old. Epilepsy, Dr. Birdsall.

Family history good, except an aunt possibly had epilepsy.

Has had scarlet fever and other diseases of childhood, otherwise healthy. Ten years ago had a severe epileptic attack. Three years ago (1885) after death of mother, was taken with light seizure, without aura, severe convulsions or subsequent somnolence. Since the increase in the frequency of the attacks, and also in their severity, interval never more than a month, often several slight attacks in a day. Has been subjected to various forms of treatment. Menstruation irregular, is anaemic and constipated. Acknowledges former habits of masturbation, which at one time was very excessive, but claims that she does not indulge in it at

Ocular History.—May 13. V. $\frac{3}{30}$ in each eye not improved by glasses. Exophoria 6°. Abduction 14°. Tenotomy of the left Externus was done, leaving orthophoria and abduction 6°.

D. WEBSTER.

October 30.—I examined A. H. this evening. She is an epileptic of 11 years standing, and she and her sister do not think she is much improved by the two operations that Dr. Stevens performed on her eyes. V. = $\frac{2}{20}$ + in each eye, but sees $\frac{2}{15}$ with both eyes at once with + 1 D. Accepts no glass with either eye singly. Hyperphoria 0°, Esophoria 1° to 2°. In accom. exophoria 9°, abduc. 5° adduct 27°. Sursumduction R 1° L 1°. Ophthal. exam. short, pale temporal halves of discs with physiological excavation both. Visual fields roughly tested, seem normal. No asthenopia and no diplopia or limitation of movement of the eyes.

D. WEBSTER.

TABULAR SUMMARY.

	CURED.	IMPROVED.	UNIMPROVED.	UNKNOWN.	TOTAL.
Epilepsy, . . .	0	3	5	1	9
Chorea, ...	0	3	2		5
	0	6	7	1	14

